CIO

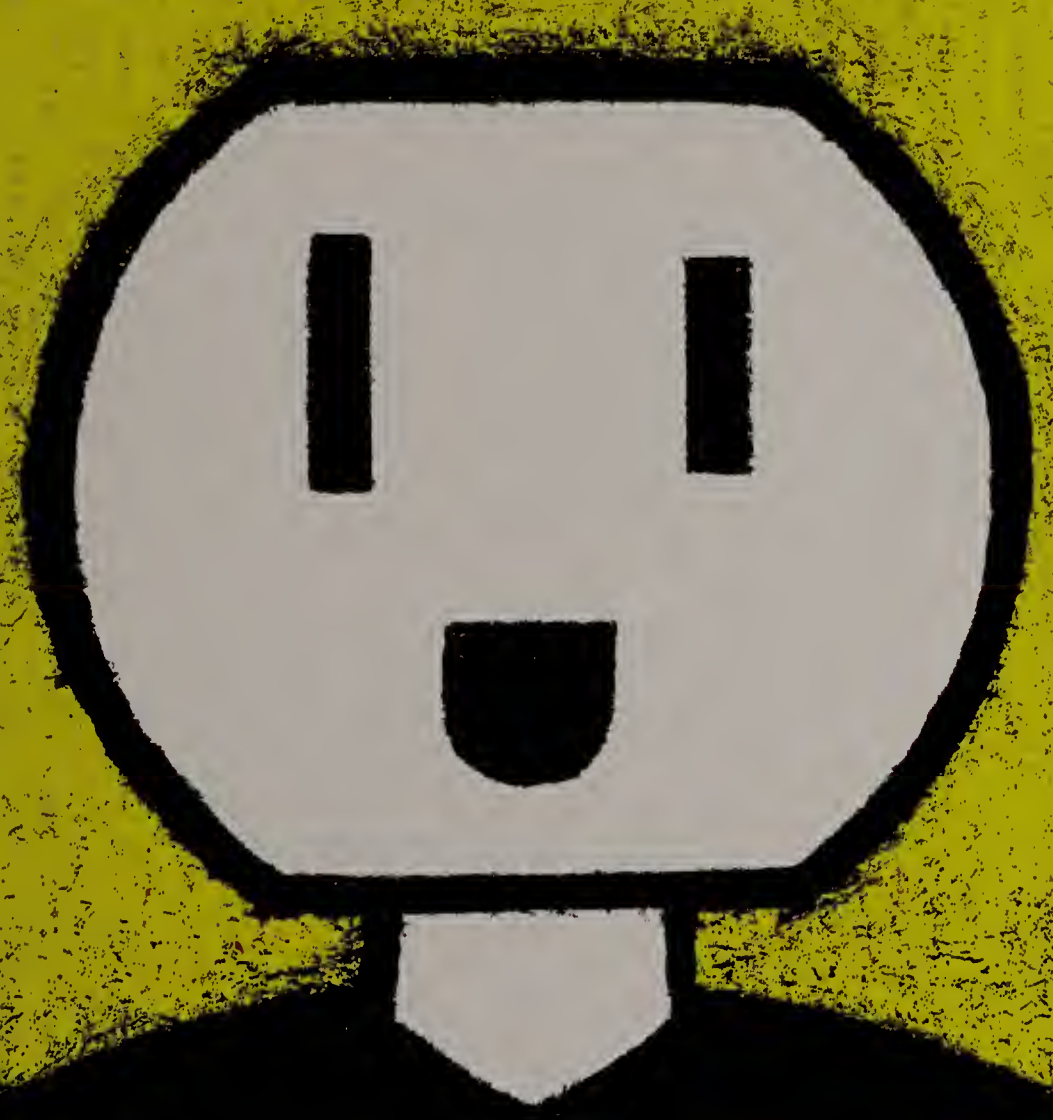
BUSINESS TECHNOLOGY LEADERSHIP

HOW TO:
Create an IT-Friendly Building
Page 55

Make Good Decisions Under Stress
Page 65

Build Business-Aligned IT Project Teams
Page 36

OPEN SOURCE
Bringing a Custom Fit to Mid-Market ERP
Page 23



USERS WHO KNOW TOO MUCH

AND THE CIOs WHO FEAR THEM

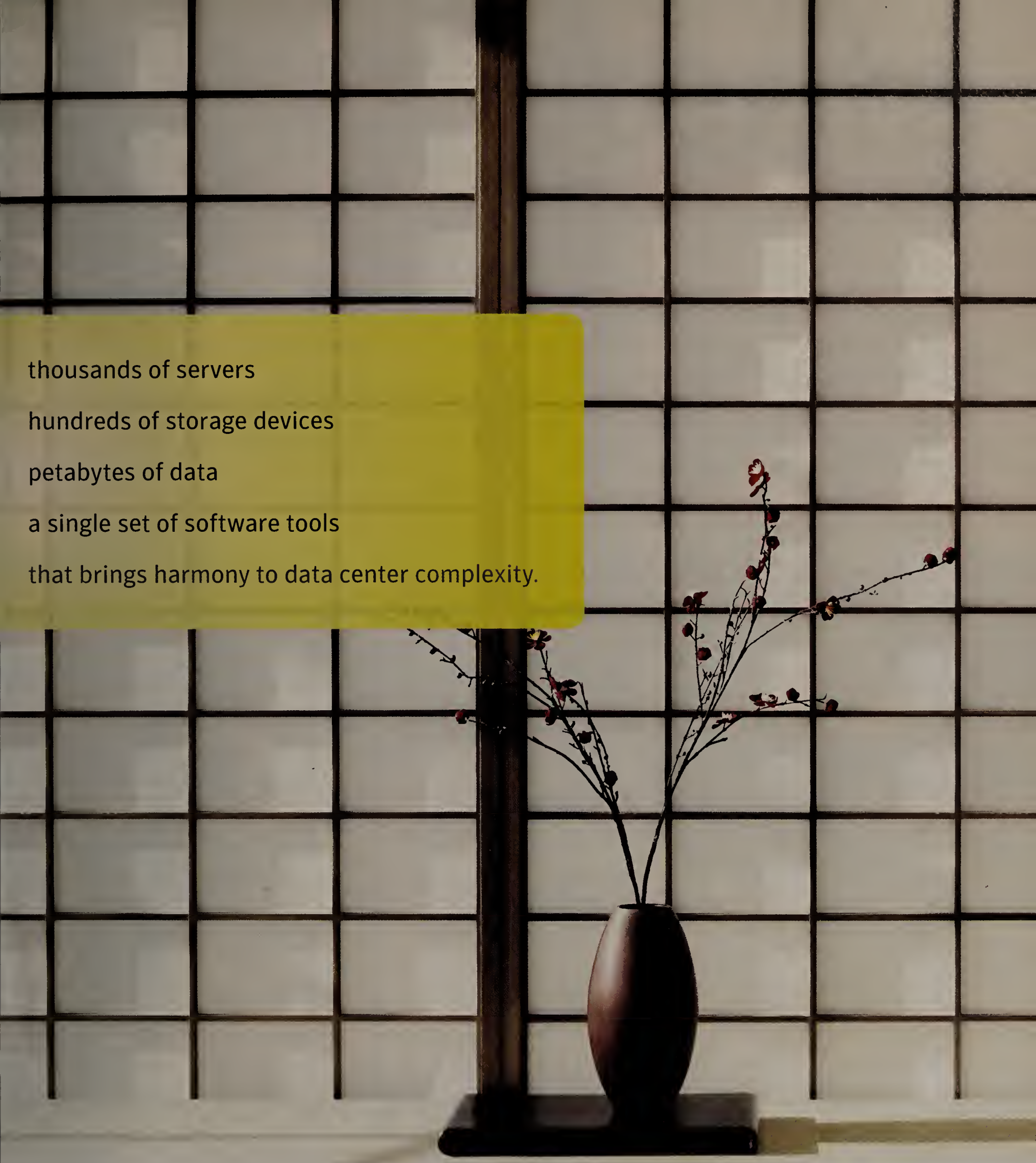
They're smart, productive and using IT you didn't provide. How to manage the modern user. Page 40

BY BEN WORTHEN

FEBRUARY 15, 2007 | $9.00 | CIO.COM

The Symantec Data Center Foundation helps you master complexity. At Symantec, we understand how the complexity of the modern data center increases costs and impairs manageability. Thanks to our Veritas cross-platform software, this infrastructure solution can help you manage the most complex, heterogeneous IT environment with a single set of tools. The cost savings can be dramatic. The same can be said for the impact on service levels. Start with our free tour: symantec.com/confidence

© 2007 Symantec Corporation. All rights reserved. Symantec and the Symantec Logo are registered trademarks of Symantec Corporation.


thousands of servers
hundreds of storage devices
petabytes of data
a single set of software tools
that brings harmony to data center complexity.

Confidence in a connected world.

symantec™

Leaders Wanted/CIO Challenge Series

Challenge #4:

Deliver business intelligence that inspires everyone, even your CEO.

Solution:

Hyperion—your management system for the global enterprise.

Here's the paradox: If you give every department the BI they want, nobody gets the BI they really need. So how do you transform BI into a strategic tool that guides the enterprise at every level? Only Hyperion® System™ 9 BI+™ lets you produce, manage and deliver strategic BI that integrates your financial and operational data. The result: information-rich reports that allow management to more accurately predict the future. More insights, fewer reports. Isn't that what smart BI is all about?

FIND OUT HOW TO PUT THE BUSINESS IN BUSINESS INTELLIGENCE.
Go to http://smartbi.hyperion.com

Hyperion™
The future in sight

© 2007 Hyperion Solutions Corporation. All rights reserved. "Hyperion," the Hyperion logo, and Hyperion's product names are trademarks of Hyperion. References to other companies and their products use trademarks owned by the respective companies and are for reference purpose only.

contents

FEBRUARY 15, 2007 | VOL/20 | NO/9

Say yes to your users more often, says **Rob Israel**, Lincoln Health's CIO. They'll be more open with you about their needs—instead of going it alone.

40

40 | Users Who Know Too Much (And the CIOs Who Fear Them)

COVER STORY | USER MANAGEMENT A new IT department is being born. You don't control it. You may not even be aware of it. But your users are, and figuring out how to work with it will be the key to your future and your company's success.
By Ben Worthen

55 | Designed for IT

INFRASTRUCTURE When Kirkland & Ellis commissioned new office space, the law firm's IT needs were central to its plans.
By Robert Sharoff

65 | Decisions Under Pressure

BOOK EXCERPT A tragic wildfire provides lessons about how leaders can make the best call when there's no time and no room for mistakes. An excerpt from Michael Useem's book *The Go Point*.

Columns

30 | The Manhattan Effect

BUSINESS SENSE The excellence of any business depends on the willingness of its customers and employees to provide direct and honest feedback. But are you and your managers ready to listen? **By Jerry Gregoire**

36 | A Formula for Alignment

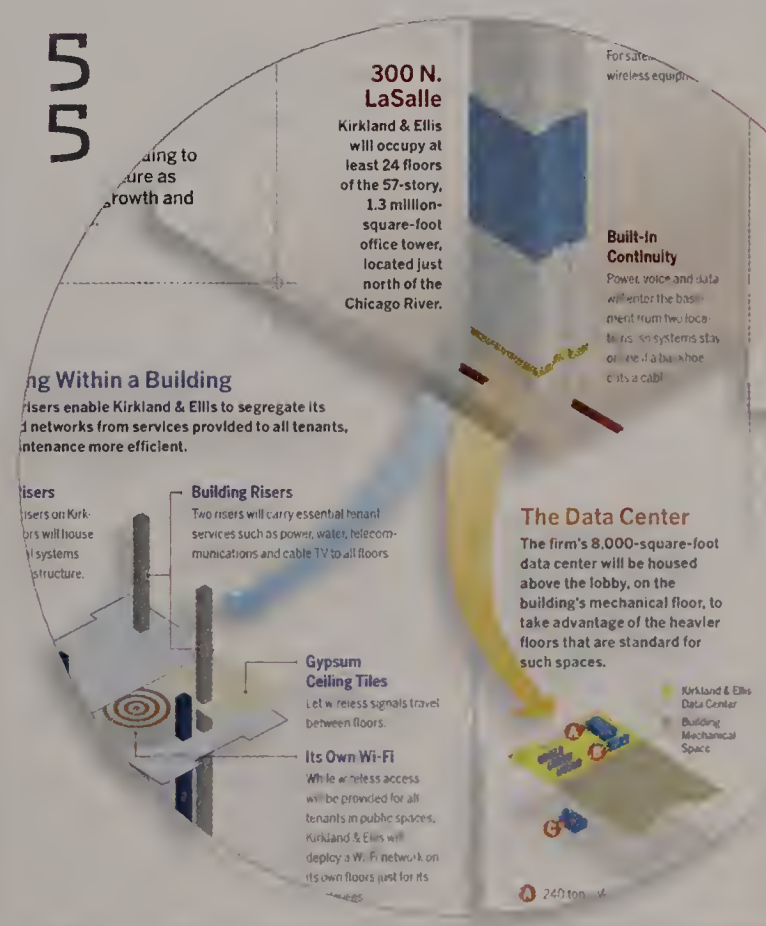
INTEGRATION Take an equal measure of business experts and IT professionals. Mix well. And watch IT-enabled processes flourish. **By Tom Abendroth**

72 | Five Things I've Learned

THE VOICE OF EXPERIENCE
Craig Newmark, best known as the founder of Web sensation Craigslist.com, talks to *CIO* about net neutrality, open source and trusting your customers.

more »

55


300 N. LaSalle
Kirkland & Ellis will occupy at least 24 floors of the 57-story, 1.3 million-square-foot office tower, located just north of the Chicago River.
Built-In Continuity
Building Risers
Two risers will carry essential tenant services such as power, water, telecommunications and cable TV to all floors
The Data Center
The firm's 8,000-square-foot data center will be housed above the lobby, on the building's mechanical floor, to take advantage of the heavier floors that are standard for such spaces.
Gypsum Ceiling Tiles
Its Own Wi-Fi

contents (Cont.)

In Every Issue

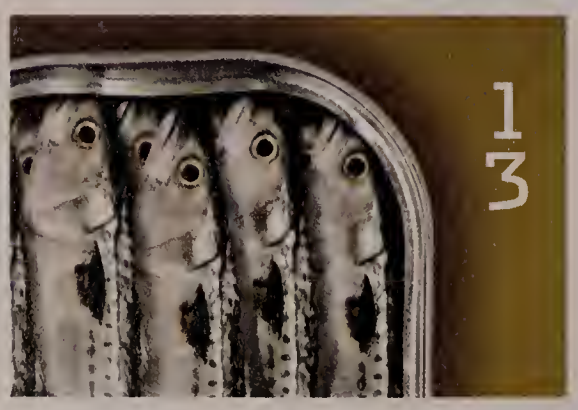
6 | From the Editor
Attempting to stem the tide of consumer technologies rolling across your enterprise is a strategy guaranteed to leave you all wet. **By Abbie Lundberg**

8 | From the CEO
If CIOs would get together on the issues that affect them and their enterprises, their collective power would be huge. **By Michael Friedenberg**

13 | Trendlines
- Avoid the online networking trap
- New data center option in Chicago
- Intel and IBM score big win for Moore's law
- Americans weigh in on biometrics
- Search engine targets cranky baby boomers
- Book review: Want a C-level post? 20 workplace habits you need to stop
- Succession planning: Why you should automate your process
- Hot jobs: Offshore project manager

23 | Essential Technology
MID-MARKET Is open source the answer to ERP? A growing number of mid-market CIOs say yes. In the wake of recent ERP vendor consolidation, open source promises flexibility for the future. Plus it fits the need to customize—affordably. **By Galen Gruman**

70 | Index



CIO Online

[YOU AND THE BOSS]

A Survival Guide

No matter what your job is, you have to serve somebody. And that's not always easy. We've handpicked stories from the *CIO* archives that will help you **make the most** of your **relationship with your boss**. Find out **how to read facial expressions**, how to **say no** and even how to **tell you're about to get axed.** While some of the stories are old, their lessons are timeless. Bookmark this page, because you never know when you'll need easy access to our **The Boss and You: A Survival Guide.** » **www.cio.com/specialreports**

[ABCS]

A PRIMER ON PROJECTS

Why do IT projects fail so often and what should you do about it? Our latest ABC tutorial walks you through the steps of effective project management. Learn what project management really means and how to get doomed projects back on track. Also, find out whether a project management office is right for you. **www.cio.com/abcs**

[ADVERTISING]

BEST AND WORST I.T. ADS

The Super Bowl is over, but the ads still linger. Some were hits, others utterly forgettable. Thomas Wailgum casts a critical eye at the classics and clunkers of IT ads from the past and present. **www.cio.com/021507**

[GREEN I.T.]

IT'S NOT EASY...

Going green is more important than ever. It's good for the environment and for your bottom line. **Katherine Walsh** takes on this timely topic in her new blog, **Green IT**. **blogs.cio.com**

Right now @ cio.com

- » **Cranky Old Guy** How TJX left its customers high and dry
- » **Movers and Shakers** Who's coming and going? Stay in the loop.
- » **Baldoni on leadership** Adapt to survive
- » **Business Pulse** Chuck Martin on stress tolerance

CERN & ProCurve Networking

15 petabytes of data

And a network that can handle it

"CERN uses ProCurve Switches because we generate a colossal amount of data, making dependability a top priority."

—David Foster, Communication Systems Group Leader, CERN

CERN has joined with ProCurve to build their network based on high-performance security, reliability and flexibility, along with a lifetime warranty.* From the world's largest applications, to a company-wide email, just think what ProCurve could do for your network.

Get a closer look at CERN and the world's biggest physics experiment. Visit www.hp.com/go/procurveCERN2.

For more information, call (800) 975-7684, Ref. Code CERN2.

ProCurve Networking
HP Innovation

Part of the 12,000 ton CMS particle detector at CERN, Geneva, Switzerland.

*For as long as you own the product, with next-business-day advance replacement (available in most countries). For details, refer to the ProCurve Software License, Warranty and Support booklet at http://www.hp.com/rnd/support/warranty/index.htm. The ProCurve Routing Switch 9300m series, ProCurve Routing Switch 9408sl, ProCurve Switch 8100fl series, and the ProCurve Access Control Server 745wl have a one-year warranty with extensions available.

© 2006 Hewlett-Packard Development Company, L.P. Photo © CERN.

IT's Last Stand

Attempting to stem the tide of consumer technologies rolling across your enterprise is a strategy guaranteed to leave you all wet

"Don't fight the evolutionary process.... The technology is here, the demand is high, and the end-user community is installing it now....

"The changes in computing that end users are demanding will have a positive impact on your business. Yet, left alone, end users will not be able to maintain the quality and security of your company's information."

These quotes come not from Ben Worthen's cover story, "Users Who Know Too Much," Page 40, but from a column that ran in *CIO* more than 15 years ago, in December 1991, called "End (User) Game," about managing end-user computing in a distributed as opposed to a mainframe computing environment. While the issues may sound similar (history *does* have a way of repeating itself), the appropriate response couldn't be more different. Fifteen years ago, author David O'Brien counseled readers, appropriately, that "all hardware [and software] connected to the network should be approved by and installed under the guidance of IS." Further, "Bulletin board–style programs should never be allowed because of the risk of computer viruses." The advice went on in that vein, using phrases like "should conform," "should be approved" and so forth. Contrast that to Worthen's warning that "prohibiting nonstandard technologies is a doomed strategy."

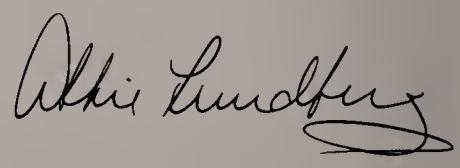
The key to capitalizing on change is to remain open to it, gather as much information as you can, encourage debate and then adapt appropriately.

When truly significant shifts take place, there is a tendency for camps to polarize. Those with a vested interest in the change argue that everything is different and the old rules no longer apply. Those with a vested interest in the established order argue that any change will have a negative if not a disastrous effect, and all their energy goes into preserving a status quo that in this case (we believe) simply cannot be preserved.

Leaders who allow this polarization to develop will find their organizations expending enormous amounts of energy on a fruitless game of tug-of-war that can only end with half their team (probably corporate IT) sprawled, defeated and wet, in the symbolic stream that divides the two sides and the other half (the end users) gloating over their victory and in possession of the symbolic rope—which, if they're left to their own devices, will certainly be enough to hang themselves with.

The organizations that will adapt most quickly and successfully are the ones that do not frame this shift in black-and-white terms. Transformation doesn't come from running willy-nilly into the void, and maintaining the security and integrity of your environment won't be achieved by rejecting everything new that comes along. The key to capitalizing on change is to remain open to it, gather as much information as you can about what's happening and why, encourage debate and then adapt appropriately. For advice on how to do this, read Worthen's article.

Don't make this IT's Last Stand—that won't be good for anyone.



Abbie Lundberg, Editor in Chief
lundberg@cio.com

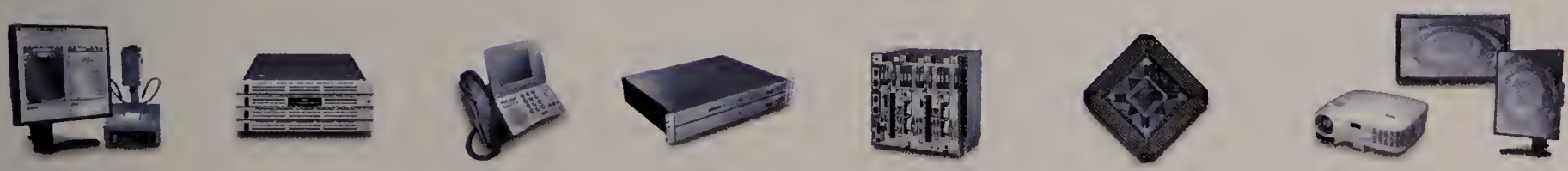
PHOTO BY STEVEN VOTE

NEC LCD Display

How do you turn a captive audience into a captivated audience?

What does it take to engage the more than 745 million passengers who will be traveling via air this year? Over a century of communications expertise and decades of experience in the imaging and software industry. As a leader in the rapidly expanding digital signage market, NEC's high resolution, feature-rich LCD and plasma displays offer airports innovative solutions to increase both profitability and efficiency. Maximized viewing capabilities. It's one more way NEC empowers people through innovation.

www.necus.com/captivate



IT SERVICES AND SOFTWARE ENTERPRISE NETWORKING AND COMPUTING SEMICONDUCTORS IMAGING AND DISPLAYS

©NEC Corporation 2006. NEC and the NEC logo are registered trademarks of NEC Corporation. Empowered by Innovation is a trademark of NEC Corporation.

Empowered by Innovation NEC

The Power of One

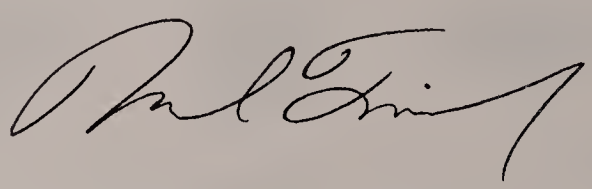
If CIOs would get together on the issues that affect them and their enterprises, their collective power would be huge

In my recent conversations with CIOs, I've noticed there are two topics that really get your blood boiling and on which there's a certain degree of unanimity: net neutrality and global warming. Whenever either issue comes up, you're not shy about expressing your personal opinion. But these opinions, no matter how vigorously expressed, remain just that: personal. What's rarely addressed is the professional responsibility CIOs have for influencing the course of these discussions, for determining the outcome of these debates. I wonder what would happen if the CIO community came together and spoke with one voice?

Let's start with net neutrality. The vendor community and the politicians have had plenty to say about it, both for and against. And the subject recently bubbled up again when AT&T, as a condition for gaining Federal Communications Commission approval for the BellSouth merger, agreed not to change the way it provided and charged for Internet access for two years. But wouldn't this whole debate over who owns the net and whether the character and quality of Internet service should be determined by the size or wealth of an organization go away if the CIO community came together to insist on neutrality, to dictate its own terms? I think it would.

The next topic really gets people fired up: global warming. There's been a ton of back-and-forth about whether global warming is a real problem, but increasingly the evidence seems to indicate that it is. (When it's 70 degrees in Philadelphia on Jan. 6, you have to admit that something strange is going on.) And don't CIOs, who oversee enormous assets that consume massive amounts of energy and generate tremendous amounts of carbon emissions, bear some responsibility for finding more efficient ways to serve their businesses' technology needs without further damaging the environment? I believe CIOs need to take a leadership role in this effort and, in doing so, place their enterprises on the side of the angels.

It's time for the CIO community to take a collective stand on issues that will not only make a difference to their own companies but also affect the global landscape in a positive way. This is not grandiose; it's just good business. And I don't think it's pie in the sky. I would enjoy hearing your take on this.



Michael Friedenberg, President and CEO
mfriedenberg@cio.com

PHOTO BY CHRISTOPHER HARTING

CIO
BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenberg
PUBLISHER Gary J. Beach

CXO MEDIA

CIRCULATION
SVP, CIRCULATION Carol A. Spach
SUBSCRIPTION SVCS. SUPERVISOR Tina Pescaro

CIO EXECUTIVE COUNCIL
GENERAL MANAGER Mark Hall
MANAGING DIRECTOR, PROGRAM SERVICES Shaw Lively
VP, DEVELOPMENT Dexter Siglin
MANAGING DIR., CONTENT DEVELOPMENT Richard Pastore
DIR., EXTERNAL RELATIONS Karen Fogerty
DIRECTOR OF RESEARCH Michael Swenson
MARKETING COMMUNICATIONS MANAGER Jennifer Baker
DIRECTOR OF DEVELOPMENT Steve Rovniak
SENIOR PROGRAM MANAGERS Bill Golden, Carrie Mathews
PROGRAM SERVICES MANAGERS
Michael Fahlsing, Ellen Friedman, Bill Roche, Janet Williams
PROGRAM SPECIALISTS Lisa Desmarais, Susan Hupp
DEVELOPMENT MANAGERS
Patrick Clarke, Lauren DeLong, Steve Dodman, John Harrison, Kathy Mayer, Pamela Stenson
DEVELOPMENT ASSOCIATE Kristin Bradshaw

EXECUTIVE PROGRAMS
VP, EXECUTIVE PROGRAMS Ellen Daly
DIR., BUSINESS DEVELOPMENT John Vulopas
DIR., EVENT MARKETING Mary Conroy
DIR., EVENT OPERATIONS Deb Begreen
NATIONAL SALES MANAGER Per Melker
SENIOR CONFERENCE PRODUCER Judith Kittredge
EVENT PLANNER Sarah Reagan
EVENT COORDINATOR Bethany Whiffin
REGISTRATION SPECIALIST Cress O'Brien
CLIENT SERVICES SPECIALIST Erica Foster
SALES ASSOCIATE Nicole Blackburn

INFORMATION SYSTEMS
IDG DIR. OF INFORMATION SERVICES Nancy Newkirk
I.T. MANAGER Sean McCracken
SENIOR USER SUPPORT SPECIALISTS
Christopher A. Kay, Thomas Lupien
USER SERVICES SPECIALIST Gloria Lam
SENIOR WEB DEVELOPER David Cohen
WEB DEVELOPER Sanghee Seo

PRODUCTION
VP, MANUFACTURING Chris Cuoco
PRODUCTION MANAGER Heidi Broadley
ASSOCIATE PRODUCTION MANAGER Lisa M. Stevenson

MARKETING
SR. DIRECTOR, MARKETING COMM. Sue Yanovitch
SR. MARKETING COMM. SPECIALIST Susan Murray
MARKETING COMM. SPECIALIST Lynn Holmlund

RESEARCH
RESEARCH MANAGER Carolyn Johnson
SENIOR RESEARCH ANALYST Seanna Maguire

ADMINISTRATION
COO Matt Smith
DIR., FINANCE Margarita Chiango
SENIOR FINANCIAL ANALYST, ONLINE AND INTEGRATED PRODUCTS Chris Bernardi
EXECUTIVE ASSISTANT TO THE PRESIDENT Diane Martin
ACCOUNTING SPECIALIST Joyce Gillis
FACILITIES SPECIALIST John Kelley
OFFICE SERVICES COORDINATOR Mary E. Wooldridge

HUMAN RESOURCES
VP, HUMAN RESOURCES Patricia Chisholm
HR REPRESENTATIVE Pauline Boyle

CXO MEDIA INC.

INTERNATIONAL DATA GROUP
BOARD CHAIRMAN Patrick J. McGovern
PRESIDENT, IDG COMMUNICATIONS Bob Carrigan

BPA WORLDWIDE

© CXO Media Inc.

©2005 Toshiba America Business Solutions, Inc. Electronic Imaging Division. All rights reserved.

PROFIT PROTECTOR & POCKET PROTECTOR

A new day is dawning

TOSHIBA bridges the gap between finance and IT with e-BRIDGE technology. Tech gurus geek out on this network-ready solution that manages, distributes and controls data via the network. The finance department loves uptime tools that automatically alert you when toner is low, service is necessary, or parts and supplies are needed. It's a new day. At least it is until tomorrow. *LetTheHarmonyBegin.com*

TOSHIBA
Don't copy. Lead.®

CIO
BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenberg
PUBLISHER Gary J. Beach

EDITORIAL
EDITOR IN CHIEF Abbie Lundberg
EDITOR David Rosenbaum
EXECUTIVE EDITORS
Christopher Koch, Elana Varon
WASHINGTON BUREAU CHIEF
Allan Holmes
TECHNOLOGY EDITOR
Laurianne McLaughlin
SENIOR EDITORS
Stephanie Gelston, Stephanie Overby, Ben Worthen
SENIOR WRITER
Thomas Wailgum
ASSISTANT MANAGING EDITOR
Emily S. Henderson
SENIOR COPY EDITOR Cathy Mallen
COPY EDITOR Susan Bryant-Still
RESEARCH SPECIALIST AND REPORTER
Margaret Locher
ASSOCIATE STAFF WRITERS
Christopher Lynch, Katherine Walsh
EDITORIAL ADMINISTRATOR
Jill Paquette
CONTRIBUTORS
Tom Abendroth, Ben Ames, John Blau, Jerry Gregoire, Galen Gruman, John P. Mello Jr., Dan Nystedt, Robert Sharoff, Sara Shay, Michael Useem

DESIGN
EXECUTIVE DIRECTOR, ART AND DESIGN
Mary Lester
ART DIRECTOR Terri Haas
ASSOCIATE ART DIRECTORS
Matthew Goebel, Chandra Tallman

ONLINE EDITORIAL
ONLINE EDITORIAL DIRECTOR
Christopher Lindquist
SENIOR ONLINE EDITORS
Sandy Kendall, Meridith Levinson, Shawna McAlearney, Esther Schindler
ASSOCIATE ONLINE EDITOR Diann Daniel
ONLINE NEWS WRITER Al Sacco
ONLINE COPY EDITOR David Gradijan

RESEARCH
RESEARCH MANAGER Carolyn Johnson
SENIOR RESEARCH ANALYST Seanna Maguire

CXO MEDIA INC.

INTERNATIONAL DATA GROUP
BOARD CHAIRMAN Patrick J. McGovern
PRESIDENT, IDG COMMUNICATIONS Bob Carrigan

BPA WORLDWIDE

©CXO Media Inc.

WHAT WE COVER, WHOM TO CONTACT

CIO CAREER
- Professional Development
- Personal Development

Stephanie Gelston, *sgelston@cio.com*
Meridith Levinson, *mlevinson@cio.com*

LEADERSHIP & MANAGEMENT
- Governance & Alignment
- Budget Management & IT Value
- Business Process Redesign
- Management Methodologies

Christopher Koch, *ckoch@cio.com*
Elana Varon, *evaron@cio.com*

SOURCING & STAFFING
Stephanie Gelston, *sgelston@cio.com*
Stephanie Overby, *soverby@cio.com*

SECURITY & PRIVACY
- Business Continuity
- Compliance

Allan Holmes, *aholmes@cio.com*
Margaret Locher, *mlocher@cio.com*

BUSINESS INTELLIGENCE
Stephanie Gelston, *sgelston@cio.com*
Allan Holmes, *aholmes@cio.com*

CUSTOMER-FACING SYSTEMS
Katherine Walsh, *kwalsh@cio.com*

ENTERPRISE INFRASTRUCTURE
- Enterprise Architecture, SOA
- Middleware
- Enterprise Resource Management (ERP)
- Supply Chain Management (SCM)

Christopher Koch, *ckoch@cio.com*
Thomas Wailgum, *twailgum@cio.com*
Ben Worthen, *bworthen@cio.com*

TECHNOLOGY
- Emerging Technology
- Networking & Communications
- Data Center
- Hardware
- Knowledge Management & Search
- Storage & Virtualization

Laurianne McLaughlin, *lmclaughlin@cio.com*
Thomas Wailgum, *twailgum@cio.com*

WIRELESS/MOBILITY
Thomas Wailgum, *twailgum@cio.com*

GOVERNMENT
Allan Holmes, *aholmes@cio.com*

COLUMN & DEPARTMENT CONTACTS

Book Reviews
Laurianne McLaughlin, *lmclaughlin@cio.com*

By the Numbers
Laurianne McLaughlin, *lmclaughlin@cio.com*

Endlines
David Rosenbaum, *drosenbaum@cio.com*

Essential Technology
Laurianne McLaughlin, *lmclaughlin@cio.com*

Forum
David Rosenbaum, *drosenbaum@cio.com*

InBox
Cathy Mallen, *cmallen@cio.com*

Jerry Gregoire: CIO Confidential
Abbie Lundberg, *lundberg@cio.com*

Martha Heller: Career Strategist
Stephanie Gelston, *sgelston@cio.com*

Michael Schrage: Making IT Work
Abbie Lundberg, *lundberg@cio.com*

On the Move
Meridith Levinson, *mlevinson@cio.com*

Peer to Peer
Elana Varon, *evaron@cio.com*

Susan Cramm: Executive Coach
Stephanie Gelston, *sgelston@cio.com*

Think Tank
Elana Varon, *evaron@cio.com*

Trendlines
Laurianne McLaughlin, *lmclaughlin@cio.com*

E-MAIL *letters@cio.com* **PHONE** 508 872-0080 **FAX** 508 879-7784 **ADDRESS** *CIO* Magazine, CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208 **WEBSITE** *www.cio.com*
SUBSCRIBER SERVICES 866 354-1125 • Fax 847 564-9453 • E-mail *cio@omeda.com*
REPRINT SERVICES Jennifer Eclipse • PARS International • 212 221-9595 ext. 237 • E-mail *jeclipse@parsintl.com*
RIGHTS AND PERMISSION Yadira Pizarro • 212 221-9595 ext. 231 • E-mail *yadira@parsintl.com*

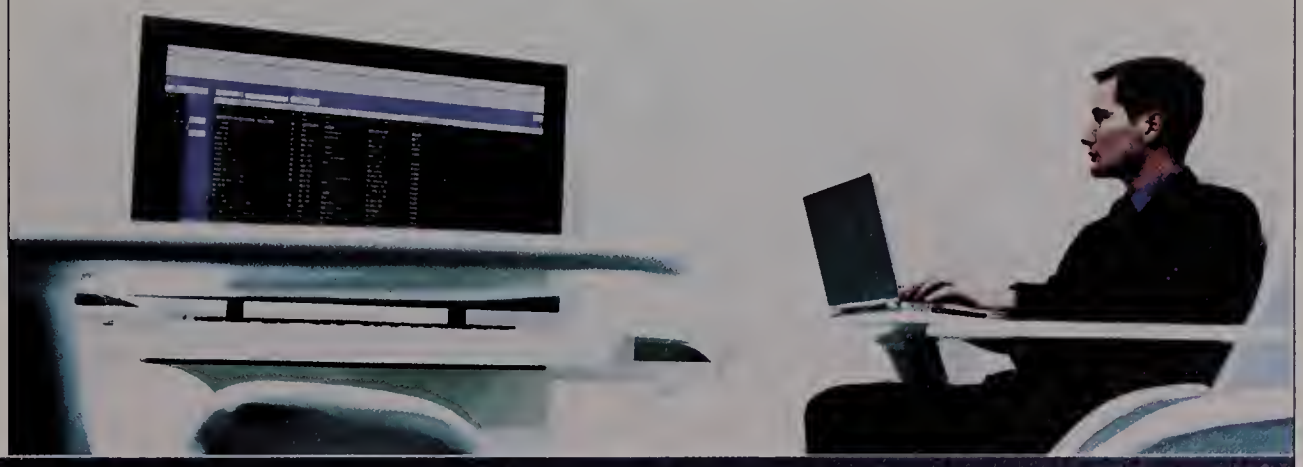
TATA

WHERE DO 7 OF THE TOP 10 FORTUNE® 100 TURN FOR THEIR *IT* NEEDS?

TO THE BIGGEST *IT* COMPANY YOU'VE PROBABLY NEVER HEARD OF...

Presenting Tata Consultancy Services, TCS, the creator of the Network Delivery Model for software development. For over 37 years TCS has been the provider of choice for hundreds of customers around the globe, including seven of the top ten FORTUNE® 100 companies. TCS, with revenues of $2.97 billion in FY 2005/06, serves its customers with over 78,000 expert associates from 60 countries around the globe, including 10,000 employees in 50 locations throughout the U.S.

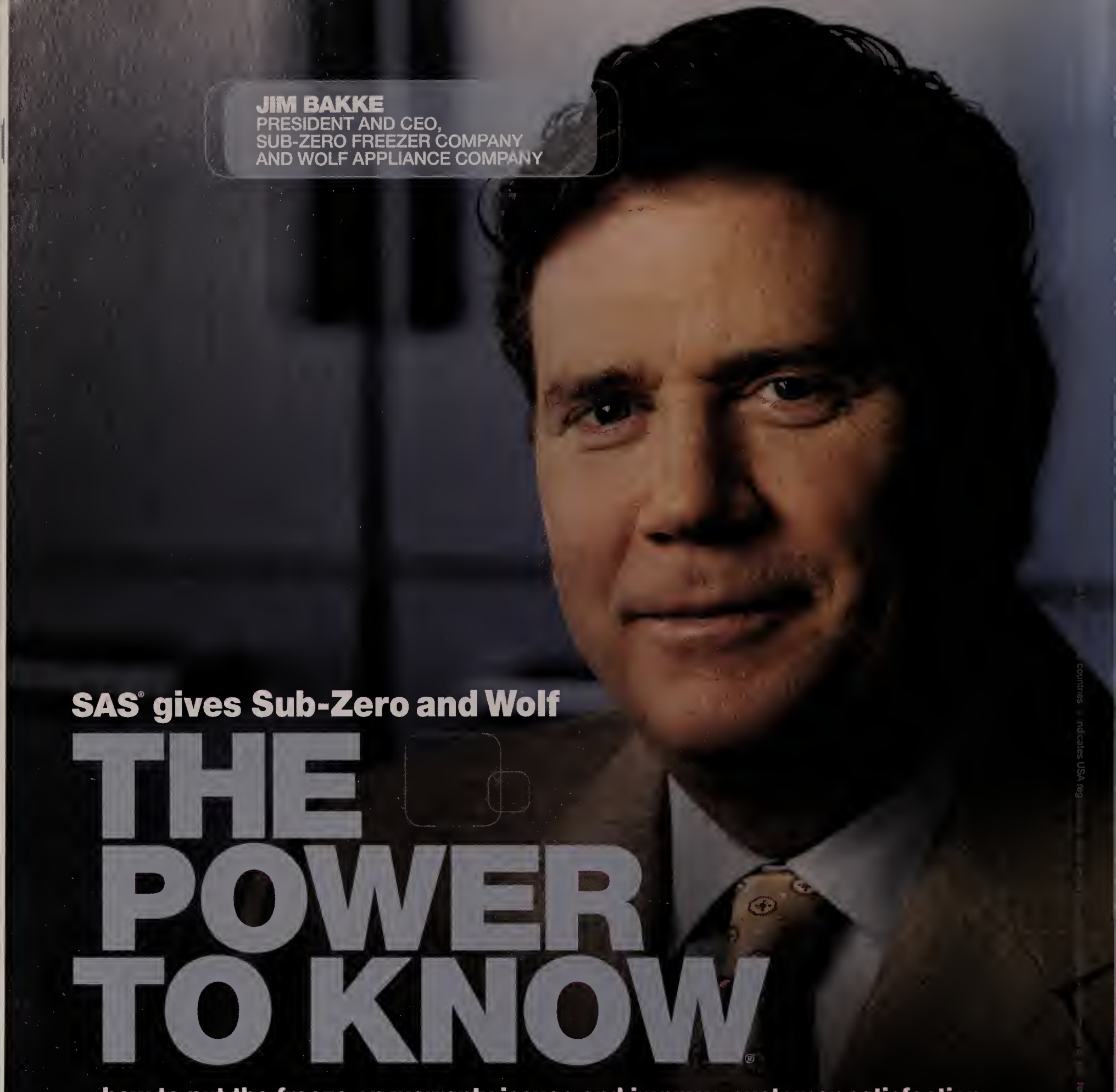
It's time you got to know the biggest IT company you've probably never heard of. For a more complete introduction, email marketing@usa-tcs.com or visit us online at www.tcs.com.



TATA CONSULTANCY SERVICES

IT Services / Business Solutions / Outsourcing

© 2007 Tata Consultancy Services Ltd. All rights reserved. Tata Consultancy Services and the Tata Consultancy Services logo are registered trademarks of Tata Consultancy Services Ltd.



SAS® gives Sub-Zero and Wolf

THE POWER TO KNOW®

how to put the freeze on warranty issues and improve customer satisfaction.

Sub-Zero Freezer Company and its corporate companion, Wolf Appliance Company, understand that quickly identifying and resolving warranty issues is the key to better product quality, lower warranty costs and greater customer satisfaction. That's why Sub-Zero and Wolf chose SAS as its business intelligence partner for warranty analysis. To learn more about Sub-Zero and other SAS success stories, visit our Web site.

www.sas.com/subzero

sas

countries. nd cates USA reg. respecti e co panies. 2006 SAS Insti te nc Al hts. ed 404840US 0806

trendlines

EDITED BY LAURIANNE McLAUGHLIN | NEW HOT UNEXPECTED

Avoid the Social Networking Trap

CAREER Have you made a resolution to expand and improve your personal network? Be careful: Online networking alone won't be enough, experts say. While the Web has made networking easier, CIOs now run the risk of networking via computer too much—and of networking only with people who also stay behind their computers. "If you're not careful, you tend to network too much with people just like you," says Ivan Misner, networking guru and author of *Truth or Delusion, Busting Networking's Biggest Myths.*

The best networks are diverse: If your network includes not only CIOs but also people from different fields, backgrounds, experience and cultures, you will meet people who can link you into other groups, Misner says. Then you are speaking with people you would not have met otherwise and gaining access to oppor- *Continued on Page 14*

In Chicago, a Cool New Data Center Option

COLOCATION For Chicago-area companies that need big-time computing power and resources but can't afford millions for their own offsite data centers, new help is on the way.

This spring, the Cyber Continuity Center, a high-density colocation data center 35 miles west of the Windy City, will open, serving midsize (Fortune 100 to 500) companies, says Bob Lacy, executive vice president. Customers will pay a per-rack fee for server space, monitoring and related services. Additional fees cover à la carte services such as incident tracking and data recovery.

The 62,000-square-foot building is windowless, made of reinforced concrete and far enough from Chicago's business epicenter that it won't be affected by interruptions to city power grids. It exceeds the Uptime Institute's Tier III Data Center designation. As you'd expect, energy efficiency poses major concerns: The center is built around American Power Conversion's InfraStruXure architecture for high-density blade server deployments. (InfraStruXure integrates power, cooling, security and related services.) The center's APC racks are cooled by large chillers that circulate cold water via pipes.

Mid-market CIOs can expect more colocation centers like this in the future, says Jed Scaramella, a research analyst at IDC (a sister company to *CIO*'s publisher). *–Sara Shay*

PHOTO BY GETTY IMAGES

Big Win in Fight to Keep Moore's Law Alive

PROCESSORS Intel and IBM say they've found a way to keep Moore's Law healthy: In late January, the companies announced separate chip-manufacturing advances involving a building block called high-k. High-k materials are better insulators than standard silicon dioxide—allowing engineers to keep shrinking transistors without losing efficiency through leaking electricity. This should produce smaller chips that run faster, on less power, compared with today's CPUs.

The news promises longevity for Moore's Law, which holds that the number of transistors on a chip doubles about every two years. Recently, engineers have been physically running out of room on chips, and the chips have been generating too much heat.

Intel officials predict the breakthrough will help Moore's Law thrive "well into the next decade."

The announcements underscore an old industry rivalry, since IBM did its research with Sony, Toshiba and Advanced Micro Devices.

Both Intel and AMD say they will use the technology to speed the transition from today's 65-nanometer (nm) chip-building process to 45 nm. Intel plans to start production in the second half of the year—with five chips for mobile, desktop and server machines. AMD plans to produce its first 45-nm chips in mid-2008, according to AMD spokeswoman Jessica Kaiser. IBM aims to sell systems with chips that use the new transistors by the end of 2008. It will use the technology to help develop large-scale servers and supercomputers, says Bernie Meyerson, chief technologist for IBM's Systems & Technology Group.

–Ben Ames and Dan Nystedt

IDENTITY ANGST

SECURITY Should biometric technology—which identifies individuals using physical characteristics like a fingerprint or retina scan—become more widely used in the United States? Americans remain conflicted on the balance between safety and privacy.

75% support the addition of biometric information to driver's licenses

73% support adding it to Social Security cards

64% support adding it to credit cards

SOURCE: Survey by online privacy certification group Truste and market researcher TNS

Social Networks

Continued from Page 13

tunities you wouldn't have known about. People are increasingly turning to the Internet to build new relationships. The LinkedIn social networking site alone hosts more than 9 million professionals. "One of the key benefits to online networking is keeping track of people who are important to me," says David Guzmán, former CIO of Owens & Minor, a medical supplies distributor. "Online communication is a fantastic supplement."

Supplement is the key word. Online networks don't replace face-to-face networking, even if you're uncomfortable, Misner says.

While expanding your circle, don't ignore networking within your company, either, Guzmán says: Smart companies will increasingly strive to connect in-house employees, he believes. The lowdown on other common networking misconceptions:

You have to be a people person to be great at networking. Wrong. Extroverts often have a hard time listening, Misner says. "Great networkers have two ears and one mouth and use them both proportionately," he says.

Networking groups are full of young professionals. In fact, only 10 percent of networking group (real-world groups, not online ones) participants were 29 or younger, according to a recent St. Thomas University study of networking group members.

It's who you know. Actually, it's how well you know them. "When someone gives a referral, they give a little bit of their reputation away," Misner says. Don't give referrals casually. And build credibility with anyone who could give you a referral.

Some people are "naturals" at networking. That doesn't mean that you can't learn how to network, or that people to whom networking comes easily can't improve. To practice, get visible and involved in many groups, he advises, and try to create "contact spheres" in businesses that are symbiotic but noncompetitive. (If you are in the travel industry, you might want to meet people in the restaurant industry.) *–Margaret Locher*

PHOTO BY ISTOCKPHOTO

The CFO needs to reduce costs.
The COO needs better ways to manage processes.
The CMO needs more ways to reach customers.
The CEO needs to know it's getting done.

The **CIO** has a strategy for IT to meet all their needs and deliver results.

Welcome to **Business Service Management** from BMC Software. Business Service Management (BSM) means the goals of IT are the same as the goals of the business. And with proven software and processes from BMC Software, BSM can be implemented in stages, demonstrating the value of IT as you go. All business success stories have to start somewhere. With BSM, they begin in IT.

www.bmc.com/results

bmcsoftware

ACTIVATE BUSINESS WITH THE POWER OF I.T.

© 2007 BMC Software, Inc. All Rights Reserved.

Search Engine Targets Cranky Boomers

WEB Are you a boomer who hates wading through a long list of search engine results? Jeff Taylor, famous for founding Monster.com, shares your crankiness—and has launched a new search engine to fix it. The search site, Cranky.com, hopes to cash in on targeted ads for the boomer demographic.

The site, launched in January, aims to simplify Web search by processing requests from the perspective of someone at least 50 years old. Taylor now serves as CEO for Cranky-.com's parent firm, Eons.

As part of its strategy to deliver a smaller slice of search results, Eons has teamed with Compete, an online market research company, to identify and analyze 5,000 of the most popular websites used by a group of 500,000 users age 45 or older.

In marked contrast to Google, Cranky's user interface lists only the top four authoritative sites matching the search term on the first results page. Numbers listed at the bottom of the page point to additional sites.

Eons' members rate and review the sites. The ratings influence the top sites, delivered as results in future Cranky searches.

The search engine also provides tips and deep links for those less cranky researchers who want to dig deeper. *–John Blau*

Top Ten

And just what are those boomers busy researching? Here's a snapshot of the top 10 search terms on Cranky.com as of mid-January.

1. Sex
2. Work from home
3. Jobs after retirement
4. Brain builders
5. Make new friends
6. Reiki
7. Body mass index
8. Blogs
9. Arthritis
10. Elder hostel

TRENDLINES

Want a C-Level Post? Make a "To-Stop" List

BOOKS Most executives have an ever-growing to-do list. But if you're looking to take the next step in your career and feel like you're in limbo, Marshall Goldsmith suggests concentrating on a "to-stop" list. Goldsmith, an executive coach who works with people being groomed for the C-level suite in top companies, says that often, successful people could be *more* successful if they ended some bad behavior.

In his lively and often humorous book, *What Got You Here Won't Get You There*, Goldsmith looks at 20 workplace habits that could leave your career stuck in neutral—or worse, get you fired.

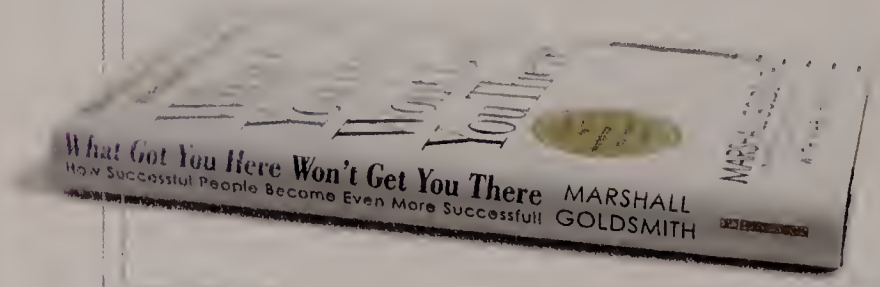
Do you not listen well enough to colleagues? Is your negativity dragging people down? Is your temper the subject of water-cooler gossip? Do you hog the credit when things go well but pass the buck when they don't?

Any of these 20 habits could be sandbagging your career prospects. Your people skills (or lack thereof) are more noticeable the higher you climb on the corporate ladder, Goldsmith says. Therefore, identifying your pitfalls and addressing them should be a top priority.

To this end, Goldsmith lays out a multistep regimen that includes getting feedback from colleagues, selecting a key area or skill to target, apologizing to those affected by your flawed behavior, advertising your efforts and then following up.

Goldsmith lays out his case in a no-nonsense way and makes it known that you must truly want to change. Refreshingly, mixed in with dozens of interesting real-life case studies, he shares his own foibles.

–Cathy Mallen



What Got You Here Won't Get You There, by Marshall Goldsmith, with Mark Reiter, *Hyperion, 2007, $23.95*

PHOTO TOP BY ISTOCKPHOTO; BOTTOM BY MATTHEW GOEBEL

intel
Leap ahead

MULTIPLY SECURITY
AND MAXIMIZE UPTIME.

INTEL® VPRO™ TECHNOLOGY WITH INTEL® CORE™2 DUO PROCESSOR.
Manage smarter. Repair PCs or deploy security upgrades remotely, even if they're powered off.* Automatically isolate an infected desktop from the network before it infects other PCs. With 64-bit capable Intel vPro technology you multiply your company's possibilities. **Learn more at intel.com/vPro**

intel
vPro™

by the numbers

BY **MARGARET LOCHER**

SUCCESSION PLANNING:
Are You Automated?

Too many companies still rely on a paper-based process. Here's how and why you should change—before your best people walk out the door.

MOST COMPANIES KNOW that succession planning is essential today, but very few have automated their process. According to a November 2006 Aberdeen Group report, only 7 percent of companies had a fully automated and integrated succession planning process. IT needs to recommend succession planning technologies that help senior managers make data-driven decisions on worker deployment and replacement, says David Foster, director of human capital management practice at Aberdeen. Why is an automated process key? Without a bridge to connect divisions, you basically have a bunch of little companies, Foster says.

If employees can't see a career path for themselves and "they don't see anywhere to move within the company, they get jobs outside of the company," Foster says. Half the companies Aberdeen surveyed used succession planning as a retention strategy.

The problem: Succession planning doesn't work well unless leaders can see an inventory of skills by category and job classification. You have to identify leadership potential before you can stop it from walking out the door.

"Talent inventory" software from vendors like PeopleBoard and HRCharter can give leaders a better view of the organizational chart and employees' capabilities, but if that information isn't included in the succession planning program, the system has to connect to HR's management system to include performance data, Foster says. "Most companies are in the infant stages. They might have the HR/IS connection, but performance data will be on paper in a file cabinet," he says.

But you can't create a proper succession plan without all the data. The first step: Automate the HR database so it can be part of the strategic planning, he says.

Best Practices

Be proactive. Don't wait until someone leaves to look into his or her replacement. Once you have a succession planning program, review it regularly. If it doesn't positively affect retention, it's not working.

Combine efforts. Include talent and performance management and compensation in the succession planning process. Succession planning should be directly linked to areas like training. Invest in software that ties in these processes, and includes a reporting and analytics component.

Enact the plan across the company. Succession planning isn't just for executives anymore: Make sure the plan touches every level of the organization.

Succession Planning **Needs Work**

Most companies know the value of having a formal succession plan

73% have a plan, or have budgeted to start one within 12 months

26% do not have a plan

But few companies have automated the succession planning process

62% use a paper-based process

32% have partially automated the process

7% have fully automated the process

NOTE: Percentages may not equal 100 due to rounding

SOURCE: Aberdeen

SURE MY INFORMATION NEEDS ARE DEMANDING.
BUT ISN'T THAT YOUR JOB?

LET ACXIOM HELP YOU PRODUCE MORE. EFFICIENTLY.

What used to be data requests have become information needs, which lead to intelligence demands. But how can you transform information into intelligence without busting your budget? That's where Acxiom can help. We can design, build and operate a scalable IT infrastructure that makes business intelligence a reality across your enterprise — it's what we've been doing for decades for many of the world's leading brands. Find out more about our IT capabilities at www.acxiom.com or 888-3ACXIOM.

ACXIOM®
WE MAKE INFORMATION INTELLIGENT™

CUSTOMER DATA INTEGRATION ■ DATA ■ IT SERVICES ■ DIRECT MARKETING ■ DIGITAL ■ RISK MITIGATION ■ CONSULTING

©2007 Acxiom Corporation. All rights reserved. Acxiom is a registered trademark of Acxiom Corporation. "WE MAKE INFORMATION INTELLIGENT" is a trademark of Acxiom Corporation

hot jobs

For more **HOT JOBS** go to *www.cio.com/career/hotjobs*.

BY **JOHN P. MELLO JR.**

Offshore Project Manager

job description: A U.S.-based manager who plans, oversees and coordinates projects with offshore components. The manager, who may work for either a domestic company or an offshore one with a stateside presence, ensures that offshore vendors meet project requirements. As more businesses outsource work overseas, these managers are in high demand. "There aren't many folks that can meet the job's profile, which is why they're highly coveted," says Eugene Kublanov, COO for NeoIT, a consulting firm.

why you need a offshore project manager: To reap the expected benefits of an offshore contract. "You need remote management," says Jim McAssey, a principal with The W Group, a consultancy. "If you don't have that skill driving a project, it's going to go awry. You just can't ship a spec to India and say, 'Develop this.' If you do, you're guaranteeing failure."

salary range
$70,000 to $250,000

desired skills: Knowledge of cost analysis; ability to lead teams and strong leadership skills; project management skills, experience running large global projects; knowledge of foreign languages; strong organizational skills; software architecture and design skills; strong management resource allocation skills; vendor management skills; seven to 10 years' work experience; great communication skills.

how to find them: Talent pools include expatriates, Americans who have done or are doing a stint in your offshoring partner's country; foreign workers, such as those with H1 visas, employed by you; MBAs with an international focus; internal candidates with global project experience.

what to look for: Unrestricted ability to travel; flexible working hours; understanding of the business; cultural tolerance; diplomacy skills; and the ability to use praise effectively. "They have to get things done without having to threaten or yell or shout or beat," observes Art Flew, CEO of Karvy Global Services in Hyderabad, India.

The ability to provide "crisp deliverables" is also key. Activities with an offshore provider take place remotely, in different time zones, says Sam Lawler, practice director of project management and strategy for GlassHouse Technologies. "It necessitates that you be over the top with crisp details to outline exactly what tasks need to get done and exactly when and who needs to do them."

elimination round: "What time is it in India right now?" A lot of offshore work is done in that nation so a familiarity with it is a must. "It's a killer question for me," McAssey declares. "If a person can't answer that question, I can tell that they have never been to India, never talked to anyone in India, never scheduled anything in India. Forget them."

growing your own: Experts are at odds over the wisdom of trying to grow offshore project managers from within an organization, especially if a company is new to global project management. But managers tapped from within have one edge over outside candidates, according to NeoIT's Kublanov. "The person is going to know your organization, they're going to have a reputation in your organization, and those things are going to allow that person to manage the internal diplomacy and manage the internal change effectively, which is critical," he says.

BY PARTNERING WITH DELL, UNILEVER'S CUSTOMER SATISFACTION KEEPS GOING IN THE RIGHT DIRECTION. UP.

Unilever makes just about everything. Including making smart decisions, like choosing Dell™ Managed Services to get a higher return on their IT investment in North America. Unilever is now able to invest more in their brands, so their customers continue to feel good, look good and get more out of life. And Dell does it all by focusing on Unilever's agenda. That's how we design business solutions with only one company in mind. Yours.

To talk with a Dell representative call

1.866.223.5210

To learn more about the Unilever story visit

www.dell.com/unilever/cio

DELL Purely You

ell cannot be responsible for errors in typography or photography. Dell and the Dell logo are trademarks of Dell Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks nd names or their products. Dell disclaims proprietary interest in the marks and names of others. © 2007 Dell Inc. All rights reserved.

ADVERTISEMENT

CIO EXECUTIVE VIEWPOINT

E-mail Governance:

Taming the Single Greatest Source of Business Risk

Shaun Wolfe

President and CEO, MessageGate, Inc.

Shaun Wolfe is a 20-year veteran of the enterprise software industry. A founder of two startup companies, he previously was president and CEO at WRQ, Inc., a $100 million enterprise software company. Wolfe has experience building businesses from the ground up and scaling complex go-to-market strategies and channels worldwide. He has extensive and direct experience in research and development, marketing, sales, executive management, and international strategies and operations.

E-mail is a great communications tool, but it also poses significant business risk. "CIOs need to take practical steps toward e-mail governance," says Shaun Wolfe, president and CEO at Bellevue, Wash.-based MessageGate, Inc. The trick, he says, is in being practical, reaching a minimum threshold that protects the company while addressing the privacy concerns of employees. Read on for more commentary from this industry insider.

Why do CIOs need to know what's going on in their e-mail environment?

For many companies, e-mail represents the single greatest source of business risk. It's a mission-critical application with limited or no corporate oversight. Nearly all employees use e-mail, but how they use it is still a mystery to many CIOs. With the click of the "send" button, identities can be stolen or confidential information exposed. So it's become a significant blind spot, exposing the company to real risk. And it's only going to get worse. Experts, including our customers, predict that e-mail volume will grow by nearly 30 percent each year. Unless companies take a proactive approach to get a handle on e-mail governance and content control now, it's going to be a real nightmare.

How do regulations like Rule 26 impact e-mail governance?

Rule 26 of the new Federal Rules of Civil Procedure requires that corporate counsel have good working knowledge of what they have in e-mail as it relates to a lawsuit, and that information must be turned over within a 90 to 120 day time frame as specified by Rule 16. We're talking about millions of e-mails. So, without intelligent classification prior to archiving, companies will have a difficult time complying with such regulations. Right now, CIOs are simply too focused on just storing the information, not preparing for retrieval. This is going to make for a lot of unhappy lawyers.

How can CIOs best develop e-mail policies and a risk management strategy?

To be successful, CIOs need to consider the following. First, e-mail is both a record of an event with attached content and a source of risk and exposure. So, there is a continual convergence of content and security needs. Second, electronic discovery is an unfortunate and expensive business reality. That means CIOs must prepare for potential litigation. Third, expecting every user to understand the implications of his or her content is a tall order, so security awareness—or the lack thereof—is an important consideration. And, finally, oversight must be aligned with employees' expectation of privacy. Whether that expectation is right or wrong, the balance between what users expect in terms of privacy and what a company is doing by way of security is a cultural nuance that varies from company to company.

"Unless companies take a proactive approach to get a handle on e-mail governance and content control now, it's going to be a real nightmare."

Are there practical steps that CIOs can take toward e-mail governance?

There are several steps CIOs can take to get to a minimum threshold of e-mail governance. First, conduct an audit of e-mail usage. This is an essential starting point that sheds light on the people and process issues that technology can address in the future. Then, implement at least a baseline of e-mail classifications—perhaps starting with two or three categories, such as business/non-business or privileged/attorney-client privileged. One should also implement self-review of e-mail. Systems can automatically scan for known risks and exposures, and prompt users to verify that they want to send certain messages that could violate policy. Like spell check, it's an easy process that respects employee privacy.

Do you have any tips to help CIOs with e-mail policy enforcement and litigation preparedness?

First and foremost, take a practical approach to the problem. Don't try to deal with all of the political ramifications of a full monitoring and intervention approach to governance right from the beginning. Start with the minimum threshold and build as you go. Once you've determined what your minimum threshold is, get to it. Frankly, you're exposed right now if you're not taking minimum steps. Finally, meet with corporate counsel, understand their problems, and prepare for litigation together. It's going to happen and the courts are going to become much more strict about how IT responds, so you need to stay ahead of the curve.

For More Information:
Check out this white paper, **"Practical E-mail Governance Now: Meeting the Minimum Threshold to Regain Control Over E-mail"** at **www.cio.com/whitepapers/messagegate**

MESSAGEGATE®
Enterprise Email Governance

CIO
Custom Solutions Group

Edited by **Laurianne McLaughlin**
lmclaughlin@cio.com

Is Open Source The Answer to ERP?

A growing number of mid-market CIOs say yes. In the wake of recent ERP vendor consolidation, open source promises flexibility for the future. Plus it fits the need to customize—affordably.

BY GALEN GRUMAN

OPEN SOURCE | When Mark Alperin went looking to replace his aging ERP system in 2006, he found himself in the same place as many CIOs of midsize companies—not feeling terribly sought after by software vendors who prioritize large enterprise accounts, and facing few choices. Alperin serves as COO with CIO responsibilities for Vertex Distribution, a manufacturer and distributor of rivets, screws and other fasteners. He wasn't happy with the two main packages for his industry, from Activant Solutions and Microsoft (neither of which he was using, nor did he want to use.)

"I had lots of concern over the consolidation of the industry. I felt locked in to those two guys," recalls Alperin. That lock-in made him nervous, since he was already frustrated by lack of flexibility with his old homegrown ERP system, which was not built around a relational database. Also, customization was a vital need when Vertex acquired other companies or needed to integrate with new customers. "We've grown because of our flexibility," Alperin says. He didn't want to risk that growth.

So Alperin chose to use the Compiere open-source ERP suite, so he wouldn't be subject

ILLUSTRATION BY ANASTASIA VASILAKIS

to a vendor's shifting priorities. "The primary motivation was the ability to control our own destiny," he says.

Alperin shares that desire with plenty of mid-market CIOs, more of whom are now tapping into open-source ERP, for reasons of cost and flexibility.

Custom Fit

Open source addresses a key concern in this instance. Often, ERP vendors pitch smaller enterprises with packaged applications that they can run as is, requiring little or no IT investment. It's a logical pitch in environments with scarce technology resources. But a substantial percentage of smaller companies want or need to customize the applications to fit their specific business needs—just like larger enterprises, notes Paul Hamerman, vice president of enterprise applications at Forrester Research.

"There's such a diversity of needs. Some companies want a system they can mold to their business, which gives them more inherent flexibility. And open source is designed to be customized," he notes.

And customized without astronomical cost. In Alperin's case, he first asked a systems integrator he's used over the years, Transactional Data Systems (TDS), to develop a custom ERP application. Alperin wanted an ERP system he could directly control, with functionality equivalent to getting a customized version of commercial software, he says. But TDS suggested a money- and time-saving solution: Base Vertex's new ERP application on the open-source Compiere project. "They said it doesn't make sense to develop all that code when there's an open-source basis to get started from, eliminating 30 to 50 percent of the coding needed," Alperin says.

The results? Alperin can now delve into the open-source code to move quickly on business needs. "We have our own programming staff, and the ability because of that to customize services on our own and respond to customer needs is an advantage," he says, "so the direct access to the source code is very important."

Prevention Partners, a maker of prevention program posters, buttons and other health-related signage, had a similar desire for customization when it decided to replace an aging ERP implementation: As the company grew, its Windows-based ERP software could not scale with it and was becoming unreliable, among other faults. "I assumed the Oracles, SAPs and Baans would be out of our price range," says Scott Rosa, CTO. So he looked for mid-market–oriented vendors.

"Flexibility means money to me," says Prevention Partners CTO Scott Rosa. Open-source ERP lets him do the customization himself.

Rosa found that they were cheaper than the large vendors, but licensing costs were "still six figures"—and that even more money would be spent on customizing whatever it bought. "We didn't want to spend our limited budget on licensing," he says. By saving licensing dollars with open-source ERP, he could redirect monies to additional customization efforts—getting a better fit at the end, for the same outlay as commercial software, Rosa says. The company has deployed the open-source WebERP software for its manufacturing arm.

"Flexibility means money to me," says Rosa. His experience with the company's previous commercial ERP system made it clear that, no matter its source, ERP software would require significant customization effort.

TOOLBOX

Open-Source ERP's Big 3

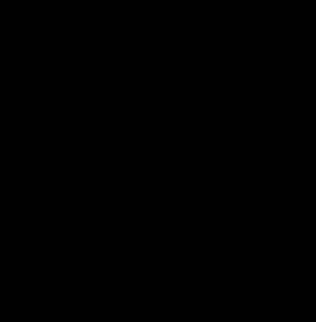
AT LEAST FIVE OPEN-SOURCE ERP projects exist today, but just three of those—Compiere, Open For Business and Openbravo—have gained traction, analysts say. In order of age:

Compiere: Founded in 1999, this project has the most adoption and "has grown into a significant level of functionality," says Paul Hamerman, a Forrester Research analyst. Compiere particularly suits sales, CRM and retail uses, but for manufacturing, lacks shop floor management capabilities, says Martin Schneider, an analyst at The 451 Group.

Open For Business: Part of the Apache group of projects, the first version was released in 2005. It's best suited for online businesses, says Peter Bohnert, a principal at Transactional Data Systems.

Openbravo: First released in 2006, Openbravo is designed for customization, rather than for a specific type of industry. It's Web-based, so companies with remote offices and traveling executives can provide browser-based access to simplify deployment and client management—attributes that won over pharmaceuticals supplier Galenicum's COO, Erich Büchen.

Less-established open-source ERP projects include WebERP and ERP5. Note that a few ERP applications are often considered to be open source but are not: OpenMFG, a well-regarded commercial application for manufacturers, lets licensed users access and modify the code for their own use, but not redistribute the code. Tiny ERP, a free ERP application, is nonetheless licensed and its code is not available. –G.G.



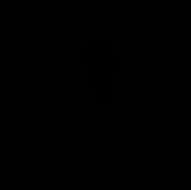
Choose and receive any of these 3 valuable APC white papers within the next 90 days for FREE!

http://www.apc.com/promo Key Code r738x

888.289.APCC x3887 • FAX: 401.788.2797

APC
Legendary Reliability®

Choose and receive any of these 3 APC white papers within the next 90 days for FREE!



- ☐ White Paper #6 **"Determining Total Cost of Ownership for Data Center and Network Room Infrastructure"**
- ☐ White Paper #102 **"Monitoring Physical Threats in the Data Center"**
- ☐ White Paper #42 **"Ten Steps to Solving Cooling Problems Caused by High-Density Server Deployment"**

☐ **YES!** Please send me my FREE white papers. ☐ **NO,** I'm not interested at this time, but please add me to your mailing list.

Name: Title:

Company:

Address: Address 2:

City/Town: State: Zip: Country:

Phone: Fax: E-mail:

☐ ***Yes!*** **Send me more information via e-mail and sign me up for APC PowerNews' e-mail newsletter.** **Key Code r738x**

What type of availability solution do you need?

☐ UPS: 0-16KVA (Single-phase) ☐ UPS:10-80kVA (3-phase AC) ☐ UPS:80+ kVA(3-phase AC) ☐ DC Power
☐ Network Enclosures and Racks ☐ Precision Air Conditioning ☐ Monitoring and Management
☐ Cables/Wires ☐ Mobile Protection ☐ Surge Protection ☐ UPS Upgrade ☐ Don't know

Purchase timeframe? ☐ <1 Month ☐ 1-3 Months ☐ 3-12 Months ☐ 1 Yr. Plus

You are (check 1): ☐ Home/Home Office ☐ Business (<1000 employees) ☐ Large Corp. (>1000 employees)
☐ Gov't, Education, Public Org. ☐ APC Sellers & Partners

©2007 APC. All trademarks are the property of their respective owners. ISX4A4EB-USg • e-mail. esupport@apc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC®

ATTENTION CRC: r738x
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920

How to Contact APC

Call: 1.888.289.APCC
use the extension on the reverse side

Fax: 401.788.2797

Visit: *http://www.apc.com/promo*
use the key code on the reverse side

APC®
Legendary Reliability®

We take "what ifs" and turn them into "so whats."

Setting a new standard in data center operational excellence

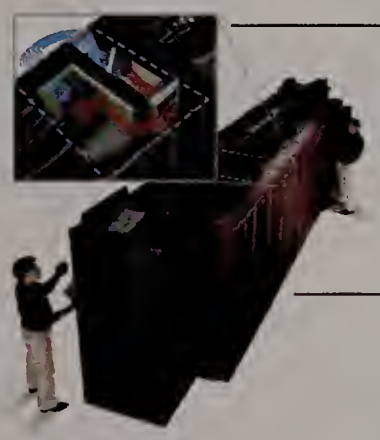
Our revolutionary vendor neutral methodology for designing, deploying, and operating data centers allows you to deal with the major issues that plague today's data center managers: **unexpected growth**, **blade server deployment**, **heat in the data center**, and **increased operating expenses**.

We've made operational excellence the new reality, where you can deploy standardized, modular components and integrate repeatable processes in a manageable, predictable environment. APC is the only company with the engineering innovation to meet the data center requirements of today and tomorrow. We eliminate data center "what ifs" by bringing you visionary solutions.

Whether you're re-designing a data center, building a brand new facility, or experiencing issues like the ones we've described, we can help. Call or visit us on the Web at **www.apc.com/promo** today and enter the key code below for more information.

Modular technology

Only pay for the power and cooling that you need with our "pay as you grow" building-block approach to configuration. This scalable solution allows you to quickly deploy, configure, and maintain our hot-swappable components.



Close-coupled cooling method

Bringing the AC into the row, closer to the source of heat generation, reduces the distance cold air needs to travel (50 feet down to 5 feet) and dramatically reduces mixing of hot and cold air streams. The net result is more efficient cooling and lower total running cost.

Thermal containment options

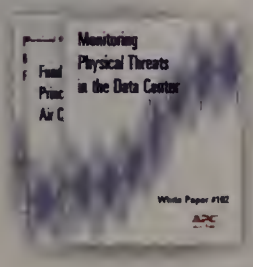
Put the cap on heat and eliminate expensive temperature cross-contamination with innovative APC thermal containment options, for rack and full aisle configurations.

NetBotz® surveillance products

Protect the physical security of your data center from threats before they lead to downtime. Receive up-to-the minute reporting on environmental and physical conditions in your data center with the NetBotz® remote monitoring system.

Data Center University™ online courses

Web-based, modular courses tackle today's data center design, deployment and operational issues. Learn from some of the world's leading data center experts at ***www.datacenteruniversity.com****.*



See how... Choose and download any 3 APC white papers within the next 90 days for FREE!

Visit www.apc.com/promo Key Code r738x • Call 888.289.APCC x3887 • Fax 401.788.2797

APC® Legendary Reliability®

©2007 American Power Conversion Corporation. All rights reserved
NetBotz is a registered trademark and Data Center University is a trademark of American Power Conversion Corporation. 132 Fairgrounds Road, West Kingston, RI 02892 USA TA3A6EF-US

"We had to build a whole ecosystem around our existing ERP to fill the gaps," he recalls. "Every business does something outside of what the software has in its business process," whether that software is commercial or open source, he says, "so if I need to have that customization, I'm going to do it myself."

Truly, control ranks right up there with costs on the list of CIO concerns regarding ERP. The open-source community, of course, values individual control as a key part of its culture. When Galenicum, a three-year-old supplier of raw materials for the pharmaceutical industry, sought its first ERP system in summer 2006, customization and control were key requirements. The company looked at two commercial applications—SAP BusinessOne and Microsoft Dynamics—but chose instead the Openbravo open-source ERP software. For COO Erich Büchen, "the most important factor was that it is easier to customize Openbravo than the other two. SAP and [Microsoft] Dynamics are much more rigid in what they can do, or at least in what their consultants say they can do."

Given that any ERP software would need extensive customization (for example, for interacting with Galenicum's customs management and logistics partners), commercial software offered no advantage, he says. That's not music to the ears of SAP, but Büchen's not alone.

Retail distribution firm Frilac chose Openbravo to ensure control over the ERP system's capabilities when it decided to replace its hodgepodge of disconnected back-office applications with a unified ERP suite. "An open-source software system meant we were in full control—with customizations suited to us, the software adapted to our particular needs and with no restrictions from the product manufacturer," says Carlos Villanueva, Frilac's sales director.

> "The people who do all the work in ERP deployments are in-house teams or system integrators, not the commercial software vendors. It's almost a miracle that SAP got as big as it did; they're just selling a skeleton."
>
> –Martin Schneider, senior analyst for enterprise software at The 451 Group

Flexible Support System

Mid-market CIOs also have to be realistic about support options—and the need to not only manage costs but also keep a few exit doors open in case of trouble. An aspect of open source that attracted these open-source ERP adopters was flexibility with who could support their development and maintenance needs.

"It's easy to switch if one consultant doesn't work out," Büchen says. "We could easily change suppliers if we were unhappy with the service," echoes Villanueva. "I'm not tied to any proprietary vendor who tells me what I can do," says Rosa.

Because smaller businesses usually have small IT staffs—sometimes just a few developers and a few network and desktop support staff—they're used to working with IT consultants who specialize in their industry. That makes it easy to adopt open-source software, since smaller companies can often turn to the same independent consultancies that support their other software.

That was the case at Vertex, whose preferred consultant recommended the use of open-source software. Or they can turn to the commercial arm of the open-source project to customize their deployments, ensuring that the development team intimately knows the software. That's the approach taken by Galenicum. But even in this case, familiarity with the consultant played a role: Because Openbravo and Galenicum are both Spanish companies, "we knew them," Büchen recalls.

Consolidation Mania

SINCE 2002, your ERP vendor choices have dwindled as commercial vendors went on an acquisition spree and gobbled up rivals. Consider the lineup changes that left SAP, Oracle, Infor, Microsoft and Lawson Software standing in this game of survivor:

- SAP purchased Factory Logic.
- Oracle purchased JD Edwards, PeopleSoft and Siebel Systems.
- Infor purchased Extensity, GEAC, Infinium, Lilly Software, Mapics, Marcam, Mercia Software and SSA Global; SSA had purchased Baan, Epiphany, Max International and Provia Software.
- Microsoft purchased Axapta, Great Plains Software, Navision and Solomon.
- Lawson purchased Intentia.
- QAD purchased Precision Software.
- Intuitive Manufacturing Systems purchased Relevant Business Systems and SupplyWorks. –G.G.

_INFRASTRUCTURE LOG
_DAY 15: Our network's too complex to manage. We're not proactive at all; we're just reacting. Help!
_Gil brought in a crystal ball. Says he can peer into the future of our infrastructure.
_DAY 17: I see a better way: IBM Tivoli middleware. It gives us a holistic view of the infrastructure and analyzes the relationship between apps, systems and networks. Fixes problems proactively for more uptime and more storage availability. Plus, it's open, modular and scalable.
_Gil says he saw all that too but forgot to tell us.
IBM
Tivoli.
Better manage the business of I.T. at:
IBM.COM/TAKEBACKCONTROL/PROACTIVE

IBM, the IBM logo and Tivoli are registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2006 IBM Corporation. All rights reserved.

"The reality is that the people who do all the work [in ERP deployments] are in-house teams or system integrators, not the commercial software vendors," says Martin Schneider, senior analyst for enterprise software at The 451 Group market research firm. "The availability of open source points out that disconnect in the value chain," he says. "It's almost a miracle that SAP got as big as it did; they're just selling a skeleton."

However, anyone relying on open-source software should understand what kind of support mechanism is actually available, says Peter Bohnert, a principal at TDS (the integrator Alperin used). For example, some projects (such as Compiere and Openbravo) have a services division, while others (such as Apache Open For Business) do not. All have independent consultants who offer support as well.

Future Outlook

Analysts are split on how wide the appeal of open-source ERP will be in the coming years. When you consider the entire universe of ERP deployments, few companies have adopted open-source ERP software. Even the most established and longest-lived project, Compiere, mostly attracts companies that have significantly customized their commercial software and thus are more likely to do the same for open-source software, says Forrester's Hamerman. (There's little hard deployment data because the software isn't licensed through normal sales channels.)

"The vast majority of companies prefer the vendor to maintain the system for technical support and compliance," says Hamerman, who expects that approach, not open-source adoption, to remain the norm.

Early adopters tend to be the smaller companies. "Many developers are intrigued by—and therefore gravitate toward—open-source solutions," says Timothy Burks, a principal at PTRM Management Consultants. "But these developers typically report to CIOs and CFOs who are far more risk averse and unwilling to jeopardize their careers; consequently, open-source ERP solutions aren't likely to take off too quickly in the commercial space." Burks expects smaller companies to be more willing to take that risk.

However, Gartner research director Laurie Wurster does not think that companies are so cautious. "Today, ERP is very low on the list in terms of open-source adoption," she says. But it's on a growth path. According to recent Gartner research, among companies currently using or considering using open source in any form, 12 percent are using open-source ERP today. And 14 percent plan to do so in the next 12 months. Open-source ERP should have increasing appeal because of the wave of ERP consolidation—mostly acquisitions by Oracle, Microsoft and Infor, she says.

"SAP and those guys are not serving the mid-market—they provide more functionality than customers need at a price they can't afford," she says, "but open source is meeting the needs." And open source has proven itself in many other enterprise applications, so any concerns center around the software's fit and support system, she says.

"Open source will become more rampant," agrees The 451 Group's Schneider. "People using old SAP R3 and pre-Version 11 Oracle Financials systems in a few years will be looking at [SAP's] Netweaver and [Oracle's] Fusion [middleware platforms] and say, 'We don't want your middleware,'" he predicts. That opens the door for a serious look at open-source ERP. CIO

Freelance writer Galen Gruman can be reached at *ggruman@zangogroup.com*. To comment on this article, go to the online version at *www.cio.com/021507*.

OPEN-SOURCE ERP IN ACTION

For a look at how midsize auction house Bonhams uses open source for ERP and CRM functions, see "**SOLD! ON OPEN SOURCE**" at **www.cio.com/071506**.

CIO.com

HANDS-ON

My ERP Story

AT FIRST BLUSH, Scott Rosa's experience parallels that of other successful open-source ERP adopters. But the path to success wasn't straight. The CTO of Prevention Partners, which manufactures and distributes posters, buttons and other health-related signage, says his company outgrew its vertical-market, Windows-based ERP system. So Rosa hired a consultant to customize the Open For Business open-source ERP software for his firm's distribution arm.

But the project management spun out of control, causing the effort to go over budget. First problem: The consultant had no experience with Open For Business, and its learning curve was steeper than expected. Second problem: Because Open For Business is very customizable, both Prevention Partners and its consultant "got caught up" in much customization, Rosa recalls. And Open For Business is based on Java, which Rosa's developers aren't experienced in, so they couldn't take over.

But Rosa didn't move back to a commercial product. Instead, he adopted the WebERP open-source software to develop a custom version for his company's manufacturing arm, which needed a quick and easily deployed ERP solution.

WebERP uses the PHP language, which his developers know, and Rosa can manage directly.

He plans on completing the Open For Business–based ERP effort as well. "I've got the code. I just need to find someone to finish it for us. I would not buy a proprietary solution," Rosa says.

Ultimately, Rosa plans to migrate one business to the other's ERP, but he hasn't decided which of the two open-source options will prevail. –G.G.

IBM

_INFRASTRUCTURE LOG

_DAY 16: It's out of control. It takes people forever to access...everything. Nobody can get anything done. We're so inefficient. There's got to be a better way.

_DAY 17: Gil says he's found one: aerodynamic bodysuits. He says everyone will be able to work faster and better now.

_DAY 21: I've taken back control with IBM WebSphere Portal. It seamlessly integrates our apps, processes and info. People have what they need to be more effective. Now we have a customizable interface that puts everything at our fingertips.

_Productivity is up. Gil says that's great, but he refuses to take off his suit.

WebSphere. Portal

Download IBM's WebSphere Portal ROI Tool at:
IBM.COM/**TAKEBACKCONTROL**/PORTAL

IBM, the IBM logo and WebSphere are registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2006 IBM Corporation. All rights reserved

The Manhattan Effect

The excellence of any business depends on the willingness of its customers and employees to provide direct and honest feedback. But are you and your managers ready to listen?

I've been lucky enough to live, work and hang out in both Manhattans—as in New York and Kansas—which makes me kind of an expert on how you can tell the difference between the two. For instance, while you might not be surprised to learn that the restaurants in Manhattan, N.Y., are better than the restaurants in Manhattan, Kan., the disparity between the two is probably bigger and perhaps more mysterious than you think.

It's not an exaggeration to say that the 10 highest ranked restaurants in Manhattan, Kan., are not as good as the 10 lowest ranked in Manhattan, N.Y. To the casual observer, there might be a few seemingly obvious reasons why this is so, such as concentration of wealth or concentration and diversity of population. But Manhattan, Kan., has some advantages too, like proximity to (hence freshness of) the ingredients as well as fewer distractions. But that's not the important distinction. The fact is that the differences are actually caused by bad attitudes and a general lack of empathy. Not by the restaurants; by the customers. And not by the customers in New York; by the customers in Kansas.

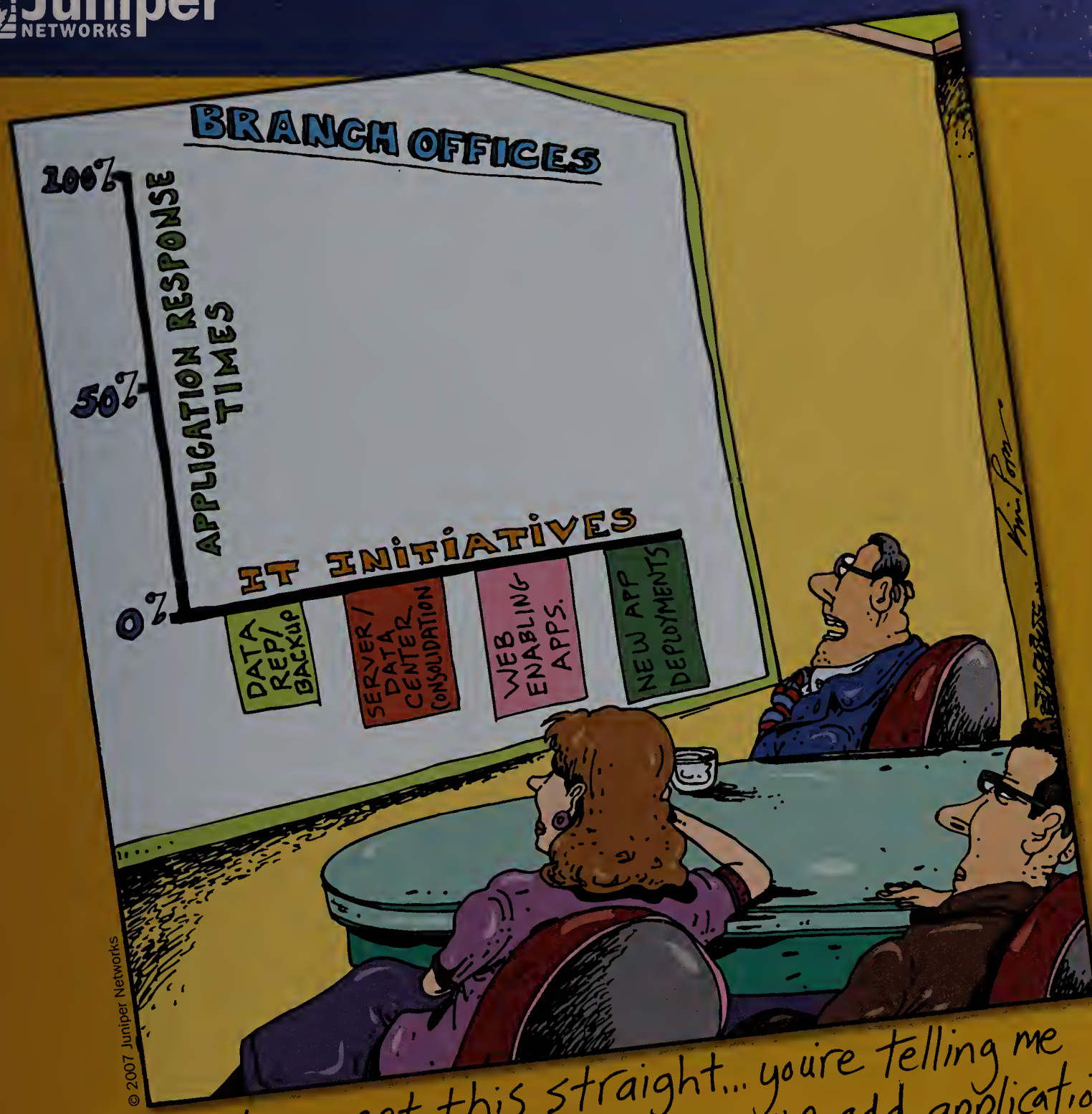
More on this restaurant thing in a minute.

I'm terrible at small talk and as awkward as Joe Cocker in a conga line when I have to walk into a room full of strangers. I'm always glad to attend CIO conferences, but I'm only good for about 15 minutes at those "networking" receptions sponsored by this or that vendor. My

Editor's Note: In this issue, we're pleased to welcome back one of *CIO*'s most popular columnists, Jerry Gregoire, whose CIO Confidential will appear every other month. You can also read his blog, Conditionally Human at **blogs.cio.com**.

ILLUSTRATION BY CLARE MALLISON

Juniper NETWORKS



"Let me get this straight... you're telling me with every IT initiative we add, application response times for branch-office users are sinking through the floor... Jensen was this your idea?"

>> Branch office application performance plummeting with each IT initiative? See how Juniper makes any branch office faster, with Juniper Networks Application Acceleration solutions.

Only Juniper provides acceleration across the broadest range of application types for branch offices, along with an extensive portfolio of complementary security and transport solutions. So roll out new applications while web-enabling others. Replicate and back up data continuously across the WAN. Save on hardware, application license and WAN service costs by centralizing servers and consolidating data centers – all while providing LAN-like application response for branch office users: **www.juniper.net/acceleration**

Juniper Your Net™

1.888.JUNIPER

coping mechanism is to enter the room, move slowly into a circle of people and pretend to listen. Most of what you hear among any circle of strangers as they carefully sail clear of the "never talk about" topics like politics, religion, race, gender, social issues and, of course, Fight Club, is an amazing amount of chatter with very little usable information or ideas being exchanged. This isn't because there aren't great ideas or powerful intellects present, but because you never know, in a situation like this, whom you might offend by offering an opinion. Sadly, many are cowed by the threat of disapproval for expressing even the most traditional point of view. What results is conversational chloroform.

Examples of pure and unambiguous communication can be hard to find, but it happens occasionally. For instance, there are our horses. We love our horses here on the ranch in Texas, but we'd be the first ones to admit that they're pretty dumb. For the most part, horses have one thing going through their little minds, 24 hours a day, and it explains a lot about their sometimes strange behavior.

It is, "I'm a horse, I taste good."

I don't know what they're so afraid of. We're not French!

Horses are absolute geniuses about one thing, though. That is, the specific location and placement of their feet. It's what allows them to navigate rough, vertical terrain at breakneck speeds or walk carefully around a newborn foal in a tiny birthing stall.

So, it is absolutely, 100 percent true that if a horse steps on your foot, it is because he meant to. The horse is attempting to communicate. This is attitude as a figure of speech, and if you don't understand the message, you might be in for a very bad day. What he's asking is, "Who's going to be in charge today? Who gets to crowd whom, and which one of us is going to step aside?" These are questions that horses ask of each other every morning as they're turned out in a pasture. Most of our horses weigh between 1,000 and 1,200 pounds. I weigh 170 pounds. So, it's important that I make myself clear about who's in charge when I get a question like this.

If a restaurateur in New York serves a bad meal, he is going to hear about it right then and there. Real-time feedback is crucial to addressing the customer's complaint and fixing the problem before the next customer comes through the door.

But back to the Manhattan thing....

This past summer a couple of other IT executives and I left Austin, Texas, on motorcycles headed for northern Colorado via the back roads of western Texas and New Mexico. This was "middle-aged guy" high adventure complete with a ride to the top of Pikes Peak, on gravel roads with no guardrails, that left us shaky in the knees. (I'm sure it must have been the thin air.)

Road trips like this through small, shabby towns separated by the emptiest stretches you can imagine feature lots of pretty unhealthy "country cookin'" and motels so rundown, we were grateful our wives hadn't come along. After about three days, we finally pulled into the midsize town of Durango and decided to treat ourselves to the best steak dinner we could find. On the desk clerk's recommendation, we found ourselves seated in what looked like a fairly new place in a strip mall—not terribly busy for a Friday night—with the usual steak house selection and astonishingly high prices. Even more astonishing was that, somehow, the chef managed to ruin the filet I ordered. Ordering a filet is usually a pretty safe bet because they're tender right out of the cow, and preparation is simply a matter of searing it on both sides (and sometimes adding that strip of bacon that nobody eats). But, somehow, someway, Chef Shoemaker managed to transform a filet into a hockey puck, except less tasty than a hockey puck, and he compounded his mistake by stopping by the table to ask us how our meals were.

Don't Ask If You Don't Want to Know

Before I tell you what happened next, I should mention that I've got a fair amount of experience in the restaurant business, having served as CIO for PepsiCo's restaurant divisions, Pizza Hut, Taco Bell, KFC and assorted others when they still owned them. As industries go, few are as tough, competitive, hazardous or fickle as the restaurant business—generally, more than 70 percent of new restaurants fail in their first year. Also, according to studies I've seen, customers who have an unsatisfactory meal on their first visit to a new restaurant will not return to try again, on average, for two and a half years, by which time the new restaurant has probably closed.

Ever heard the expression, "Nothing you say will ever teach you anything"? Not true.

I turned to Chef Cinder and calmly and politely said, "This is, without a doubt, the worst filet I've ever had, anywhere." This was followed by a silence so loud it was making the other guys wince. Chef Incendier then mumbled something and walked on to the next table. My traveling companions began glaring at me like I'd just strangled a kitten while I made silent gestures back that said, "What? Was it something I said?"

This was one of those cases where I was clearly right and the chef and my companions clearly wrong. The chef was wrong in that he didn't visit our table because he wanted to know how the meal tasted, he wanted to hear that we liked it. Had I

We've always put our customers first. Now, they've returned the favor.

CDW was recently ranked #1 overall in the 2006 CIO Insight magazine survey of leading technology vendors. The 826 top IT executives surveyed also ranked CDW #1 for providing the most value and for being the most reliable IT vendor. Maybe it's because we offer customers dedicated account managers and teams of technology specialists in several key IT categories. And because we can reliably custom configure up to 2,100 systems in our state-of-the-art configuration center. So, it stands to reason that CDW was also ranked #1 in customer loyalty. Call us today and find out what it's like to work with the #1 technology provider.

CDW

The Right Technology. Right Away.

CDW.com • 800.399.4CDW

©2007 CDW Corporation

known that, I wouldn't have bothered to speak. It's just one of those things you learn on your way to becoming a CIO and one that managers with less experience trip over all the time. It is the pervasive and persistent misunderstanding among young managers at all levels that insight will work with people who are unmotivated to listen. Getting the message across doesn't depend on articulation, or eloquence or the impeccable logic of your argument, but on the emotional context in which the message is being heard. It's absolutely true that your boss, your peers and your team can hear you only when they are moving toward you, and they are not likely to when your words have to chase them.

My friends were also wrong in this case, because they thought I was being impolite.

I was being nothing of the sort.

Getting the message across doesn't depend on articulation, or eloquence or the impeccable logic of your argument, but on the emotional context in which the message is being heard.

It's Not Rude to Be Direct

In fairness, both of these guys grew up and lived most of their lives in the Midwest, and this kind of direct, seemingly harsh communication is considered unmannerly and New Yorky. Where does this dopey idea come from, anyway? This difference in ability to provide direct, unfiltered feedback is why the restaurants in New York are better than the ones in Kansas. This is the Manhattan effect. The inherent advantage a restaurateur in New York has is that if he serves a bad meal, or serves it too slowly, he is going to hear about it right then and there. Real-time feedback is crucial to addressing the customer's complaint and fixing the problem before the next customer comes through the door. The ability to measure things begets new behaviors.

The restaurateur in Kansas, on the other hand, is at a huge disadvantage. When served a bad meal in Kansas, the customer is far more likely to tell the waiter that the meal was "fine," quietly pay the bill and never come back. The only indication to the restaurant that there might be a problem with the food is that they are going broke. This is the bad attitude and lack of empathy that the silent individual can inflict.

Even restaurants that succeed, such as this purportedly great steak house in Durango, will never be as good—or as successful—as they could be. That there must be some genuinely good restaurants in Kansas is a testament to those individual owners' talent and self-critical natures, and their ability to attract the handful of diners in their geography willing to engage them with critical feedback (probably transplants from the East).

In an effort to keep them from stabbing me with their steak knives, I tried to explain this thinking to my two corn-fed friends and relate it to how we might have all done things better in our jobs had we the benefit of receiving and giving more direct real-time feedback. "My feedback," I said, "just might save these guys from going out of business." To which one of the guys said, "What if you don't care if they go out of business?"

This might be the most insightful thing I've heard him say in 20 years. Silence as an argument carried out by other means. The revenge of the passive-aggressive. How many businesses have been lost, how many careers have been damaged, because feedback was not forthcoming? Was it not forthcoming because of malevolence or a belief that it would not be well-received?

Depending on the nature of your business or geography or whatever, it might be pretty tough to get meaningful feedback from your customers, but your managers and employees are a different story. If you're not getting meaningful feedback from them, there's no point in spending a lot of time wondering why. The reason is *you*.

Being lucky enough to get real-time feedback doesn't mean much without some measure of receptivity to the negative message. I imagine that the owner of a successful restaurant in New York probably has to have a pretty thick skin. I'm not sure whether this is something you have to be born with or something you can learn. I certainly could have used a thicker skin when I was an active CIO. Even though I knew better, I still had a tendency to take negative news pretty hard. I had a terrific career, but there's little doubt that I could have done some things better.

To all of my ex-teammates who might have been afraid to knock on my door because of the way they thought I might receive negative news, I'm sorry for that, and I wish I had it to do over. I suppose it doesn't do any good to close the barn door after the horses have gotten out, but you might as well.

For most of the IT leaders reading this column, you're in luck. It's not too late. CIO

Jerry Gregoire is the former CIO of Dell Computer and the beverage division of PepsiCo. Comment on the online version of this article at *www.cio.com/021506*.

Conditionally Human

JERRY GREGOIRE covers all sorts of interesting territory in his blog, **CONDITIONALLY HUMAN**, at **blogs.cio.com**.

CIO.com

Printing in color.

Savings in black & white.

Big Impact, Low Cost: Kyocera Color Solutions for Business

Add vivid color to your documents for better business results. Kyocera offers you a wide range of color solutions, all with a very low total cost of ownership. From desktop printers to high volume MFPs, choose Kyocera for award-winning reliability and proven performance. And, to find out what you can do to reduce your printer costs, try our TCO Tracker.* This online tool allows you to calculate what you'd save by switching from your current printer to an equivalent Kyocera printer.

That's the power of People Friendly. Learn more: www.kyoceramita.com

People Friendly.

THE NEW VALUE FRONTIER

KYOCERA

*Source: Current Analysis Inc

KYOCERA MITA CORPORATION. KYOCERA MITA AMERICA, INC.
©2007 Kyocera Mita Corporation. "People Friendly," "The New Value Frontier," the Kyocera "smile" and the Kyocera logo are trademarks of Kyocera.

A Formula for Alignment

Take an equal measure of business experts and IT professionals. Mix well. And watch IT-enabled processes flourish. **BY TOM ABENDROTH**

Why would someone complete medical school and residency training, then spend a decade in IT to become a CIO? Colleagues ask me this when they hear my background. My response reflects the growing importance of integrating business professionals with information technologists.

Health care, like other fields using automation to transform business practices, requires a fusion of IT expertise and subject matter expertise. This need has given rise to multidisciplinary project teams that couple clinicians with information technologists, and to the emergence of individuals who are trained dually as clinicians and IT professionals.

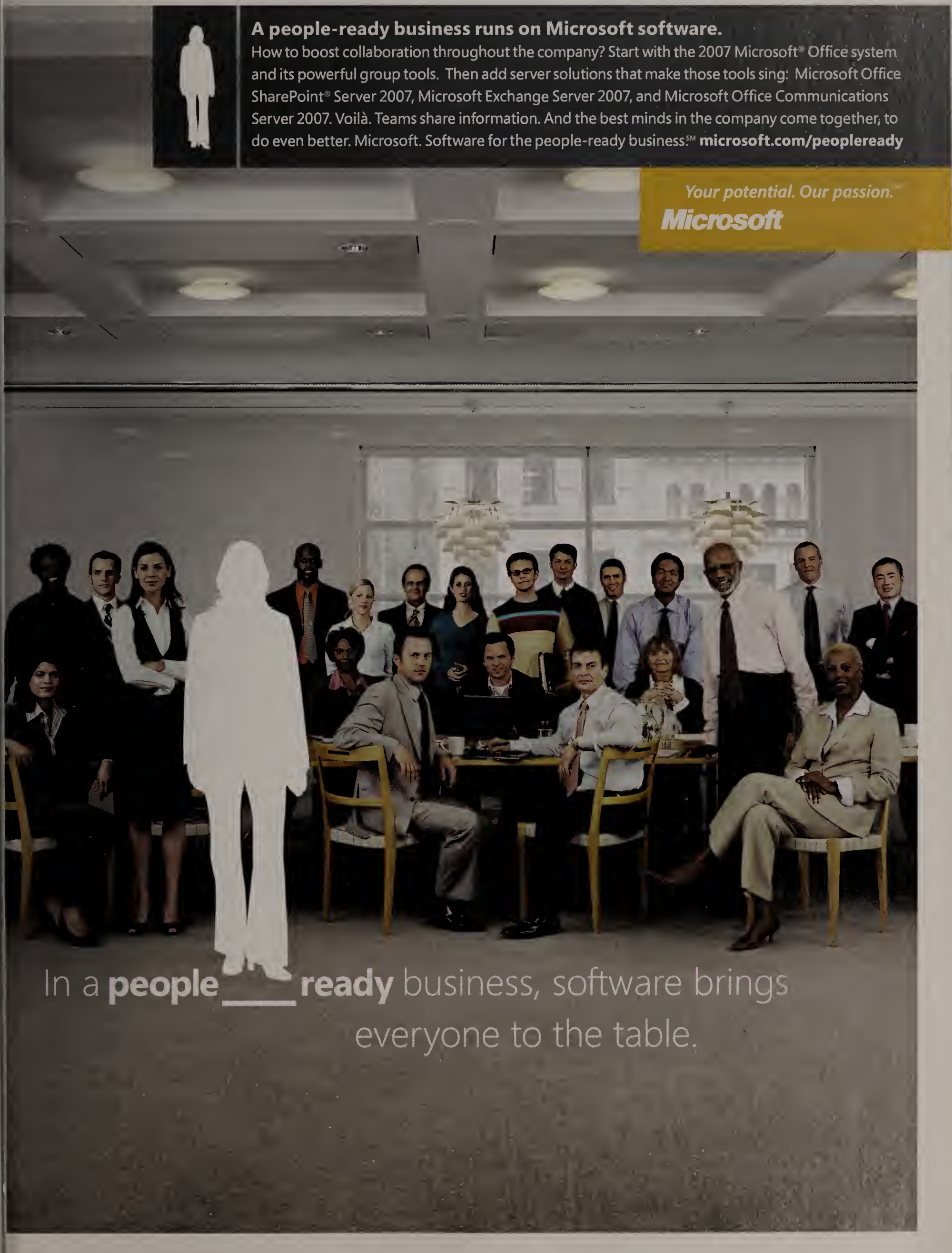
During my medical training in the 1980s, I observed clinicians hampered by primitive information management tools. Information sharing among health professionals within any single hospital was suboptimal. Sharing across healthcare settings was extremely limited. Efforts to improve this situation were insufficient, with limited clinician involvement in IT.

The magnitude of the problem—and the potential benefits achievable by attacking it—captivated me. With a naive understanding of the challenge ahead and no evident career path, I decided to focus my professional life at the intersection of medicine and IT. Over the past 20 years, the most important lesson I have learned is the value of blending IT professionals with the subject matter experts they support.

The Business-IT Mind Meld

During the past decade, our academic health center has created multidisciplinary teams to implement an electronic medical record (EMR). Though we are deploying commercially available

ILLUSTRATION BY JOE KAVACH


A people-ready business runs on Microsoft software.
How to boost collaboration throughout the company? Start with the 2007 Microsoft® Office system and its powerful group tools. Then add server solutions that make those tools sing: Microsoft Office SharePoint® Server 2007, Microsoft Exchange Server 2007, and Microsoft Office Communications Server 2007. Voilà. Teams share information. And the best minds in the company come together, to do even better. Microsoft. Software for the people-ready business.℠ microsoft.com/peopleready
Your potential. Our passion.
Microsoft
In a people____ready business, software brings everyone to the table.

products, this undertaking has proven to be ambitious for us—as it has for the entire healthcare industry. We have succeeded thus far because we have engaged clinicians to work alongside IT professionals, not just as consultants or focus group participants, but as this-is-my-job-and-passion members of the EMR team. Several clinicians have stepped away from direct patient care, driven by a desire to advance their professions and a recognition of IT's potential to assist. A dozen nurses, pharmacists and medical laboratory professionals now devote themselves full-time to improving patient care processes, applying automation where it can help. Several physicians remain clinically active but dedicate up to 40 percent of their time to our EMR initiative.

We ensure that each project team integrates clinicians from different disciplines, since collaborative planning is required to design effective team-based care processes. Physicians, for example, know what care is required and why but often are unaware of the downstream workflows used by nursing, pharmacy, radiology and laboratories to deliver this care. Similarly, most clinicians know how they would like the computer system to work but require the expertise of the IT professionals to make it work that way. Together, and only together, does our team of clinicians and IT professionals encompass the experience and expertise required for effective process automation in health care.

Our EMR team members have benefited one another professionally. The members from IT have learned the clinical relevance of the systems they install, providing meaning and personal rewards not previously realized. The clinicians, meanwhile, have learned IT skills, such as workflow analysis and project management principles, increasing their ability to leverage automation to improve clinical processes. Most have, without deliberate career planning, developed hybrid skills that will make them more valuable for the rest of their careers. Several of the clinicians have made permanent career transitions to IT roles.

Understand Your Business

Download more tips from Tom Abendroth and read **HOW TO BUILD A BUSINESS-SAVVY I.T. STAFF** online at **www.cio.com/021507**.

CIO.com

Implementing computerized physician order entry—a critical EMR milestone that enables physicians to order diagnostic tests and prescribe medications and other treatments—had been a personal goal for 15 years. Upon finally reaching this milestone recently, I was overwhelmed not by a sense of technical accomplishment but rather by pride in our team—how it had grown together, the passion and commitment it demonstrated, and the fact that it was unstoppable with or without me.

How to Align Your Project Team

The strategies for creating such integrated teams are straightforward:

1. Forge the project team from individuals who are respected subject matter experts and who are inspired by the greater goal of the initiative (for us, improving the quality of the care we deliver). If backfilling the vacancies created by these individuals in their work units is not painful, then you probably have selected the wrong individuals.

2. Establish two leaders for every project team: a project leader from IT to perform traditional project management functions and drive technical decisions, along with a process leader from the business unit to drive workflow redesign decisions. This pairing mirrors the inherent duality of IT-enabled transformation: technical execution married to effective process redesign.

Only together does the team of clinicians and IT professionals encompass the experience and expertise required for effective process automation.

3. Require that team members have a common space, common goals and a functional dependence on one another to succeed. If you demand that they interact intimately on all aspects of project work, the cultural differences that exist among them will soften over time to create a new, shared culture.

4. Establish a forum for integrated decision making, where team members from all disciplines (for us, nurses, physicians, pharmacists, clinical technologists, medical records personnel and IT professionals) must contribute. This forum becomes the nerve center of the project. Eradicate decision making in silos, because there are few decisions that affect only a single discipline within a team-based workflow.

5. Allow no party to proceed along an independent path. Nourish the commitment to multidisciplinary integration where it exists; force it where it does not; and highlight the successes achieved through collaboration.

We all will complete major projects in our careers. Some will fade, especially as advances in IT transform our grand accomplishments of the past into trivial exercises in the future. But the memory of our EMR team's maturation will never leave me. I am excited by the new generation of clinicians who are embracing IT early in their careers, working alongside IT professionals who are learning the processes of health care. Through this evolution, the landscape of healthcare IT will never be the same. CIO

Tom Abendroth is CIO of Penn State Milton S. Hershey Medical Center and the Penn State College of Medicine. He can be reached at *tabendroth@psu.edu*. To comment on this article, go to the online version at *www.cio.com/021507*.

Where do your IT assets go when you dispose of them?

- ☐ Landfills in third world nations
- ☐ Evidence rooms awaiting litigation
- ☐ The grateful hands of identity thieves
- ☐ The water supply you drink from

Where should they go?

Intechra is the world leader in IT asset recycling. We focus exclusively on eliminating the risks surrounding data security, compliance, and environmental impact, while maximizing value recovery on IT asset investment for businesses around the world. Visit us at www.intechra.com/cio for more information or to schedule a meeting.

intechra™

Waste-free, Worry-free IT Asset Recycling.™

© 2007 Intechra Inc. All rights reserved.

USERS WHO KNOW TOO MUCH

AND THE CIOs WHO FEAR THEM

A new IT department is being born. You don't control it. You may not even be aware of it. But your users are, and figuring out how to work with it will be the key to your future and your company's success.

BY BEN WORTHEN

An April 2006 survey by the Pew Internet and American Life Project found that 45 percent of adults who use the Internet said it has improved their ability to do their jobs "a lot."

These are your employees, and their message couldn't be clearer: Technology, at least in their eyes, has made them significantly more productive. But CIOs shouldn't be patting themselves on the back just yet. For this productivity boost the study credits the Internet, *not* enterprise IT, not the technology you provide, not, in short, you. And while Pew's finding undoubtedly includes people who use the Internet to access your corporate applications, Lee Rainie, the Pew project director, says the research is not pointing to what a good job CIOs have been doing.

It tells a different tale.

"The big story is that the boundary that existed in people's lives between the workplace and the home has broken down," says Rainie.

Reader ROI

- How consumer IT has changed the relationship between CIOs and users
- Why prohibiting nonstandard technologies is a doomed strategy
- Tips for managing consumer IT in the enterprise environment

PHOTO BY KEVIN MIYAZAKI

By appointing himself "the only person in IT allowed to say no," **Rob Israel**, Lincoln Health's CIO, makes sure his users don't view his corporate IT department as obstructionist.

IBM®

Featured server is the IBM BladeCenter HS20, model 79813FU. IBM, the IBM logo, BladeCenter, and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, the Intel logo, Xeon, and the Xeon Inside logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and/or other countries. Other company, product, and service names may be trademarks or service marks of others. ©2006 IBM Corporation. All rights reserved.

_INFRASTRUCTURE LOG

_DAY 25: They're in the cafeteria!! AAAGGGHHH!! These useless things can't work with each other. They aren't scalable. They aren't responsive. And you can't adjust new capacity on the fly. The horror.

_So many of them, I have to eat standing up. My arches are killing me. And I got avocado on my shirt.

_DAY 26: The answer: IBM BladeCenter® with Dual-Core Intel® Xeon® Processors to boost performance and balance workloads. Its self-automating features make it easy to manage, and it has more blades per chassis for a smaller footprint. The BladeCenter even opened up its specs, so the things we buy today can work with the things we buy tomorrow.

_I can eat my turkey-avocado sandwiches in peace again. Mmmmm...

IBM.COM/**TAKEBACKCONTROL**/BLADE

Almost unlimited storage and fast new communication tools allow people to use whatever information they choose, whenever they want to, from wherever is most convenient for them.

According to Pew, 42 percent of Internet users download programs, 37 percent use instant messaging, 27 percent have used the Internet to share files, and 25 percent access the Internet through a wireless device. (And these numbers are all one or two years old. Rainie "would bet the ranch" that the current numbers are higher.)

Does that sound like the tools you've provided your company's employees? Do you encourage them to download programs and share files? Do you support IM? Have you outfitted a quarter of your company's employees with wireless devices?

Really?

"A consequence of the blending of worlds is that people bring gadgets from their home life into the workplace and vice versa," says Rainie. For example, a December 2006 survey by Searchsecurity.com found that only 29 percent of companies had a corporate instant messaging tool, a number that seems relatively small when compared with the percentage of people Pew says use IM in the office.

Users have a history of providing their own technology, but the capabilities of today's consumer IT products and the ease with which users can find them is unprecedented. Thumb drives, often given away free at conferences, provide gigabytes of transportable storage. Google spreadsheets and other online documents let multiple people collaborate in one file. The Motorola Q, a phone that uses the cell network as an always-on high-speed Internet connection (and can be yours for just $125 on eBay) lets users forward their work e-mail to their phones without ever touching a mail server. And that's only three examples. There's a consumer technology out there for every task imaginable—and if there isn't, there's a tool that will let someone create it tomorrow.

The era in which IT comes only from your IT department is over.

So where does that leave you?

The Shadow IT Department

The consumer technology universe has evolved to a point where it is, in essence, a fully functioning, alternative IT department. Today, in effect, users can choose their technology provider. Your company's employees may turn to you first, but an employee who's given a tool by the corporate IT department that doesn't meets his needs will find one that does on the Internet or at his neighborhood Best Buy.

The emergence of this second IT department—call it "the shadow IT department"—is a natural product of the disconnect that has always existed between those who provide IT and those who use it.

And that disconnect is fundamental. Users want IT to be responsive to their individual needs and to make them more productive. CIOs want IT to be reliable, secure, scalable and compliant with an ever increasing number of government regulations. Consequently, when corporate IT designs and provides an IT system, manageability usually comes first, the user's experience second. But the shadow IT department doesn't give a hoot about manageability and provides *its* users with ways to end-run corporate IT when the interests of the two groups do not coincide.

"Employees are looking to enhance

Tools for Managing Shadow IT

First, you need to know what your employees are doing

Striking the right balance between corporate IT and shadow IT requires possessing detailed knowledge about how the employees in your company are really accessing and using information. This calls for network monitoring, content monitoring and restraint. Unfortunately, no one vendor can give you everything you need to do these things. This is because different types of workers use different types of data in—you guessed it—different ways. Forrester Research breaks the data into three broad categories.

Transactional content: This is information that's as likely to come from a business partner as from someone in your company. It includes faxes and forms that people fill out, as well as scanned images and corporate information like tax files. This type of information is often closely aligned with a company's workflow processes and business process management systems. According to Forrester, vendors whose tools work well for capturing this type of content include: 170 Systems, Adobe, Captiva, EMC, FileNet, Mobius, Whitehill Technologies.

Business content: This category includes the multitude of spreadsheets, documents and presentations that the people in your company use to do their jobs every day. These files—and the information that they contain—are typically found throughout an enterprise and are probably managed by any number of systems. But this information is also easily passed on as attachments or as unstructured data removed from the applications in which it is supposed to reside. Forrester says the following vendors help companies monitor the movement and whereabouts of this kind of data: ClearStory Systems, Extensis, Hummingbird, MDY, Oracle, Xerox.

Persuasive content: This is information that is meant to be shared with the outside world. It can be something that an employee puts in a blog or the marketing material that the company distributes. Forrester says the following vendors specialize in managing this kind of content: BroadVision, Ektron, FatWire, Percussion Software, Stellent. *–B.W.*

DISCOVER INNOVATION

STARING BACK AT YOU FROM A $50 DESKTOP WITH A $500 ATTITUDE.

Discover SUSE® Linux Enterprise Desktop 10 from Novell®. Infrastructure for innovation.™
It's the $50 desktop. The only one with amazing desktop graphics, word processing, spreadsheet, presentation, Web browser, email, multi-media, active directory integration and advanced Microsoft-file compatibility. The only one that delivers everything you need for a fraction of the cost. So you can put your resources to better use. It's just one more piece of the Open Enterprise: all the infrastructure it takes to innovate.

Innovate today at www.novell.com/linux

Novell®
This Is Your Open Enterprise.™

Copyright ©2007 Novell, Inc. All rights reserved. Novell, the Novell logo, and SUSE are registered trademarks and This Is Your Open Enterprise and Infrastructure for innovation are trademarks of Novell, Inc. in the United States and other countries. *Linux is a registered trademark of Linus Torvalds. All other third-party trademarks are the property of their respective owners.

their efficiency," says André Gold, director of information security at Continental Airlines. "People are saying, 'I need this to do my job.'" But for all the reasons listed above, he says, corporate IT usually ends up saying no to what they want or, at best, promising to get to it...eventually. In the interim, users turn to the shadow IT department.

For many good and not-so-good reasons, the CIO's first instinct frequently is to fight the shadow IT department whenever and wherever he detects it. But that approach, according to people who have thought long and hard about this potential war between IT departments, is a recipe for stalemate, if not outright defeat for CIOs.

The employees in your company are using consumer IT to work faster, more efficiently and, in many cases, longer hours. Some are even finding new and better ways to get work done. CIOs should be applauding this trend. But when you shut down consumer IT, says William Harmer III, assistant vice president of architecture and technology of financial services company Manulife, "You end up as a dissuader of innovation."

Yes, the shadow IT department presents corporate IT with security and compliance challenges. Users could be opening holes in the corporate firewall (by downloading insecure programs), exposing company data irresponsibly (by scattering laptops, handhelds, and thumb drives hither and yon) and handling information in any number of ways that could violate any number of federal regulations. But CIOs need to deal with these problems strategically, not draconically.

"There's a simple golden rule," says David Smith, a vice president and research fellow at Gartner. "Never use security and compliance as an excuse for not doing the right thing. Never use these as sticks or excuses for controlling things. When you find that people have broken rules, the best thing to do is try to figure out why and to learn from it."

Successful companies will learn how to strike a productive balance between consumer IT—and the innovative processes for which employees are using these tools—and the need to protect the enterprise. This will require CIOs to reexamine the way they relate to users, and to come to terms with the fact that their IT department will no longer be the exclusive provider of technology within an organization. This, says Smith, is the only way to stay relevant and responsive. CIOs who ignore the benefits of consumer IT, who wage war against the shadow IT department, will be viewed as obstructionist, not to mention out of touch. And once that happens, they will be ignored and any semblance of control will fly out the window.

And that won't be good for anyone.

Maria Anzilotti, CIO of Camden Property Trust, allows IM in her shop even though it's used for nonwork purposes: "We looked at the risk and decided it wasn't worth shutting it down. We keep an eye on it."

How the Shadow IT Department Works

Here's an all-too-common response to the shadow IT department, courtesy of Bill Braun, vice president of information systems for the Texas Credit Union League: "What's good for me is that it's simple to say no [to consumer IT]. There goes most of the problem. Possibly some of the benefit, but certainly the problem."

Passing over the fact that Braun admits that he's willing to forgo the potential innovations consumer IT can provide, this approach also assumes that the shadow IT department has a similar structure to its corporate counterpart and

PHOTO BY DANIEL KRAMER

Increase productivity—*automatically*

NEW

Diskeeper® 2007

Maximum System Performance and Reliability — *Automatically*™

You know that IT enables business growth and productivity, but what does individual system performance have to do with this?

System performance, reliability and health all degrade over time leaving you with sluggish servers, PCs, and laptops that slow down productivity.

Diskeeper 2007 makes computer systems run faster than new. Through the use of brand-new InvisiTasking technology, Diskeeper automatically eliminates potential system performance and reliability problems on the fly, IN REAL TIME without affecting system resources or intruding on system demands. One simply installs the software – Diskeeper takes care of the rest.

Get the benefits and savings from increased system performance without costly system hardware purchases. Get Diskeeper.

Diskeeper makes all systems run faster — *period.*

Visit www.diskeeper.com/roi2
and check out the ROI calculator to see how you and your IT staff can save by using Diskeeper 2007.

Volume licensing discounts are available from your favorite reseller or call (800) 829-6468 promo code 9252

FEATURING NEW

InvisiTasking™

A truly invisible system maintenance technology.

InvisiTasking was coined from "invisible" and multitasking. This technological breakthrough promises to change the way the world operates and maintains their computer systems. InvisiTasking allows computers to do something that has never been done before – to run at maximum peak performance, continuously, without interfering with system performance or resources – even when demand is at its highest!

Microsoft GOLD CERTIFIED Partner

Diskeeper® corporation

©2007 Diskeeper Corporation. All Rights Reserved. Diskeeper, Maximum System Performance and Reliability — Automatically, InvisiTasking and the Diskeeper Corporation logo are registered trademarks or trademarks of Diskeeper Corporation in the United States and/or other countries. Microsoft is a registered trademark of Microsoft Corporation in the United States and other countries. Diskeeper Corporation • 7590 N. Glenoaks Blvd. Burbank, CA 91504 • 800-829-6468 • www.diskeeper.com

can be managed in the same way.

It doesn't and it can't.

The shadow IT department is an entirely different beast.

Corporate IT is highly structured, with one individual or a small group controlling the nodes in a network and their relationships to one another. The shadow IT department, on the other hand, has no central authority and at best an ill-defined hierarchy; nodes join on their own and develop their own relationships. Marty Anderson, a professor at the Olin Graduate School of Business at Babson College, calls corporate IT a command architecture and shadow IT an emergent architecture. Command architectures are set up to make them easy to manage and, as a result, they respond to top-down orders. Emergent architectures contain no dominant node and therefore provide no lever by which to manage them. That's why it is impossible to kill the shadow IT department or keep it out of your company. It has no head to cut off or single channel to dam.

It's natural for corporate IT to feel threatened by the shadow IT department, but the truth is that they already coexist everywhere. "The two have always been present," says Anderson. "The management skill is noticing where they intersect and coming up with a strategy for dealing with it."

For example, a similar dynamic has long played out in HR. A company's employees have titles and reporting relationships that give their work a formal structure. But at the same time every company has an informal structure determined by expertise, interpersonal relationships, work ethic, overall effectiveness and so on. Companies suffer when HR is out of phase with the informal structure. Employees are demoralized when the formal architecture elevates someone at the bottom of the informal architecture, and people who occupy the top spots in the informal architecture leave when they aren't recognized by the formal one. Good HR departments know where employees stand in both the formal and informal architectures and balance the two.

> **"The key is not to paint all users the same."**
>
> –William Harmer III, assistant VP of architecture, Manulife

IT needs to learn how to strike a similar balance. Corporate IT isn't going to go away, and neither are the systems that IT has put in place over the years. But a CIO who doesn't develop a strategy to accommodate the shadow IT department will be employing an outdated and (more important) an inefficient business model. And, like the HR department that ignores the informal relationships in a company, the CIO might lose sight of how his users actually work. Corporate IT thereby loses its authority and, eventually, the CIO loses his job. It won't happen quickly, but it will happen. As Anderson puts it, "It will be like getting nibbled to death by ducks."

How to Make Peace With Shadow IT

Techniques will differ for each company depending upon its business, the degree of regulation to which it's subject, its risk tolerance and so on, but some principles

I, A User

Confessions from the land of shadow IT

My name is Ben Worthen. I wrote the article you're now reading, and I turn to the shadow IT department frequently.

I'm not a troublemaker. I'm not trying to harm *CIO* or CXO Media in any way. On the contrary, I'm trying to make myself more productive. I have a list of projects that just keeps growing, and I need technology that will help me get things done quickly. More often than not, I find what I need on the Internet.

About a year ago, I started forwarding all of my work e-mail to my Gmail account. Our work e-mail system is Lotus Notes, and while it has a Web-based interface, the design is clunky and the URL is hard to remember. But that's not the main reason I took matters into my own hands. E-mail has become my de facto document repository. People send me all sorts of information (reports, PDFs, attachments) that I constantly need to refer to. Gmail is a better document repository for two reasons. First, my IT department wants me to delete messages whenever my mailbox hits 200MB but Gmail gives me unlimited storage, so I never have to delete anything. Second, Gmail actually has search that works; I can never find anything in Lotus Notes even if I type in an e-mail's subject line verbatim.

I also use shadow IT for collaboration. When half my office mates moved to a building across the street, we decided that the easiest way to keep in touch with one another was through instant messaging. Also, other colleagues work remotely and so we don't have a chance to share story ideas in person. Our IT department doesn't support any collaboration tools, so we turned to the Web. Our first attempt was MySpace.com. It worked. There are blogging tools and automatic notifications that let us know when someone has a new idea or has commented on an old one.

Yes, this puts a certain amount of our company's intellectual property on the Internet where anyone can see it, but it's the only way my colleagues and I can see it.

And IMHO, that outweighs the potential risk. *–B.W.*

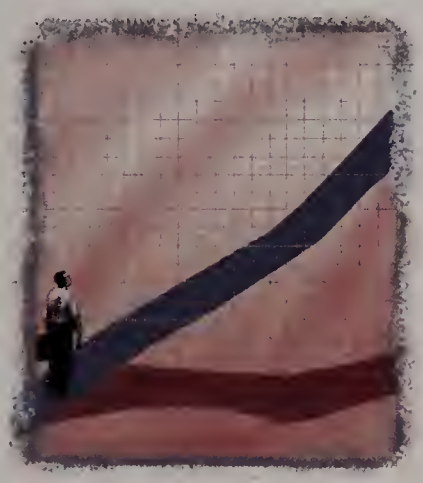
CIO 2 CIO PERSPECTIVES

Today's IT Leaders on Market Trends

RELIABILITY

FROM IT METRIC TO BUSINESS DRIVER

Reliability is often cited by IT professionals as one of the most important factors of technology solution evaluation, particularly application and operating system selection. The key questions IT professionals ask—Can my end users and customers depend on the application? How will this system handle changing business requirements and uses over time? What platforms and technologies will allow me to implement a highly reliable solution today that will scale to my business needs in the future?—all demand that reliability be taken into consideration.



A variety of studies from both industry analysts and research firms support this conclusion. In fact, one new study has found that 100 percent of respondents cited reliability as either very important or important in server operating system platform decisions. The survey, one of a series from IDG Research Services, engaged CIOs at midsize and large enterprises to talk at length about reliability and its effect on IT decisions. These interviews affirmed that reliability is very important across all industry groups and has a direct impact on the success of business units.

This IDG Research Services study found that:

• *There are several underlying drivers of system reliability.*

In the minds of IT executives, reliability is a broad concept and includes such factors as uptime or application availability, predictability, scalability and support

• *Practicality dictates that many businesses quantify reliability simply by measuring availability.*

While the concept of reliability is broad, in real-world applications most businesses quantify reliability in terms of system availability (e.g., "Our systems are 99.99 percent available")

• *CIOs are sending the message: reduce complexity!*

IT executives acknowledged that vendors are certainly moving toward simplified management and integration of their systems, but that they need to do more. Complexity leads to increased costs, so more needs to be done to simplify the integration and management of software and hardware stacks.

How Do IT Executives Evaluate Investment Decisions?

Reliability is important to operating environments and networking infrastructure because of their role in supporting the day-to-day function of the entire IT infrastructure. Poor reliability translates to potentially incalculable risk and cost to the business. "We want the server operating system to work for us and not to get in the way of anything else," says Vince Sheehan, CIO of the Indiana University School of Medicine. "It's important, obviously, that it work and work right. But the more time, energy and resources we're spending on server operating systems, quite frankly, that's time taken away from delivering outcomes. Obviously, it doesn't just run without any assistance, but the less time and resources we throw at trying to keep the operating systems operational, the more time we have for delivering applications, clinical work and research data."

Definition of Reliability

While CIOs agree that reliability is an important consideration when making IT decisions, their definitions and methods of actually meas-

About CIO2CIO Perspectives: This peer-based thought leadership program analyzes quantitative research and tests it via qualitative interviews with actual CIOs. The resulting executive insight is then disseminated via CXO's multimedia assets. To learn more about CIO2CIO Perspectives, please contact mavery@cxo.com.

uring it vary greatly. Sheehan corroborates the importance of reliability: "Reliability is very important in the health care context and is critical for the day-to-day working of the business." He further explains, "In health care, we never close. Stability is also a key element. Regarding stability and availability, one leads to another. Manageability is a big issue. The simpler and easier it is to manage, the better it is for us. We also talk an awful lot about sustainability. We don't need to be switching technologies every six months, 12 months or even two years."

Security Innovation, a Wilmington, Mass.-based company specializing in application vulnerability assessment and risk mitigation, defines a reliable business solution as one that adapts effectively as requirements change, meets end-user service-level goals and is generally easy to maintain. Reliable technologies have characteristics that contribute to both the consistent, predictable availability of business solutions and IT efficiency and control over the complexity of the environment.

However, in the minds of many CIOs who are focused on keeping the business running, the primary area of attention is in system uptime, or availability. Measuring uptime is considered the most direct and tangible means of measuring reliability, and is critical for managing the day-to-day workings of the business. Put simply, applications must be up and running 24x7, and all of the decisions one makes after that are all components of that availability. CIOs are wary of operating systems that contain unproven technology that could put uptime at risk. As John Steffy, CIO of Findlay Automotive Group in Henderson, Nev., explains, "It all comes down to reduced downtime and reduced support calls. Whenever you talk about IT departments supporting users, it's really about how infrequently they call and how much downtime there is."

Measurement of Reliability

According to Security Innovation, reliability has been historically measured by treating a system as a collection of individual components and assuming that measuring reliability as the "uptime" of each component in isolation could support broader conclusions about the reliability of an entire system. However, these comparisons failed to capture reliability from a real-world business perspective, as they did not account for the time and cost associated with IT not being able to meet business needs as well as the constant efforts required to overcome unpredictable or failure-prone technologies.

It appears that IT decision makers are changing the way they think about reliability – from the narrow definition where "reliability = uptime," to a broader definition based on the end-to-end ability of the IT solution to address business pain points. "Reliability in our IT organization is specifically based on the availability and uptime of an application measured end to end," says Fred Dingraudo, CTO of Affinia Group, an auto parts maker in Ann Arbor, Mich. "So, an example of that would be an order entry application. We try not to just measure the uptime of the server that runs that order entry application. We try to measure it end to end from the customer service representative's personal computer through the network, through the application and back again. That end-to-end view is how we measure availability."

Go to **www.cio.com/whitepapers/itreliability** now to obtain a free download of "Evaluating IT Reliability—Prerequisite to CIO Success." Based on a major research survey by IDG Research Services featuring in-depth discussions with CIOs at midsize and enterprise-class organizations, this just-released white paper aims to help CIOs analyze their IT infrastructure so that it runs more effectively and efficiently, and draws on peer insights to create highly available and manageable systems.

Conclusion

Businesses realize the importance of reliability and are trying to more accurately evaluate its underlying drivers, such as system predictability, quality and depth of vendor support, and the application ecosystem. As CIOs begin to change how they measure application and operating system reliability from a narrow, system-to-system basis to an all-encompassing end-to-end effort, they will be better able to evaluate the real-world reliability of solutions. ■

"The great leaders are like the best conductors — they reach beyond the notes to reach the magic in the players."

— Blaine Lee,
The Power Principle

The CIO Leadership Conference

Transforming the Role of the CIO: Strategies for Orchestrating Change

April 29 – May 1, 2007
Hyatt Regency Huntington Beach Resort & Spa
Huntington Beach, California

To Register:

Visit: www.cio.com/leader_2007
Phone: 800.355.0246
Email: executiveprograms@cxo.com

Early registration discount ends March 23, 2007

Opening Keynote:

Good to Great And the IT Leader
Jim Collins, Author and Co-Author,
Good to Great* and *Built to Last

www.cio.com/leader_2007

Produced by:

CIO Business Technology Leadership

CIO Executive Council The Professional Organization for CIOs

Official Host:

redhat.

bmcsoftware

Corporate Sponsors:

cisco

iRise VISUALIZE INNOVATE DELIVER™

ITM

ORACLE

symantec.

"If you want to be an innovator and leverage IT to get a competitive advantage, there has to be some controlled chaos."

–André Gold, Continental Airlines' director of information security

are universally applicable. Here are some starting points.

1. Find out how people really work.
Whether you know it or not, your company's employees are using technology of their choosing, or using technology of your choosing in ways you never intended. Brian Flynn, senior VP of IT at BCD Travel, found this out when he deployed software that monitored the content moving across his network. Not only were employees using consumer IT tools (like IM) but they were using IT-provided applications to do things that were clearly security risks (such as sending sensitive information back and forth).

"I am convinced that most companies are flying blind," says Flynn. "This is going on everywhere and IT just doesn't know."

Fight your instinct to discourage these behaviors by legislating against them. Yes, there may be security and compliance risks, but declaring open war on the shadow IT department will only turn it into an insurgency, driving it underground where it will be harder to monitor and harder to negotiate with. Instead, consider this an opportunity to find out where the IT you've provided is out of sync with your users' needs.

2. Say yes to evolution.
CIOs need to make users feel comfortable about bringing their underground behavior into the light. The first step is a change in attitude.

"We tend to think of people who think out of the box as troublemakers," says Flynn. "But we need to realize that maybe they know what they're talking about and maybe we should try to meet them halfway if we can."

Always try to help users figure out a safe and secure way to do whatever it is they're trying to do. "People get used to [IT] telling them no, and after a while they stop telling you what they're doing," says Continental's Gold. "So we try to say yes, dot dot dot."

Rob Israel, CIO of the John C. Lincoln Health Network, has developed a policy that formalizes this mind-set.

"I'm the only person in IT allowed to say no," he says. Conversely, his IT employees have only three options: approve a request, research it or pass it up to him. According to Gold and Israel, getting a reputation for saying yes will encourage users to come to you with ideas. That gives you the chance to learn what it is that the user is really trying to do and come up with a way to do it that won't compromise security.

As irrelevant or irresponsible as some shadow IT projects seem on the surface, it's important to accept the fact that users do things for reasons. If they are e-mailing critical files among themselves, it's because they need to work on something from a different location and that's the most direct solution that they can come up with. IT's job shouldn't be figuring out how to prevent the user from accessing and moving files, but rather to find a solution that lets him take that file home in a way that doesn't make the company vulnerable and isn't any more complex than the method that the user discovered on his own.

That last part is important. "No one," says Flynn, "will jump through hoops." They'll go around them.

Gold says that most shadow IT projects are attempts to solve simple problems, and it's easy for CIOs to mitigate the risks if they're willing. For example, Gold found that people were taking files home on thumb drives. Instead of trying to outlaw the practice, he began distributing thumb drives with encryption software on them. The users' experience never changed. "It was common sense to keep both security and how people work in mind," he says.

3. Ask yourself if the threat is real.
The other part of developing a say-yes reputation is realizing which shadow IT projects really represent a security threat and which just threaten IT's position as the sole god of technology provisioning. Maria Anzilotti, CIO of Camden Property Trust, a real estate developer, says that she has continued to allow IM even though most people use it for non-work purposes. "We looked at the risk and decided it wasn't worth [shutting it down]," she says. "A lot of people use it to communicate with their kids. It's faster and less disruptive than phone calls. "We keep an eye on it."

Killing a shadow IT app without appreciating how thoroughly it's been integrated into a company's workflow can have unanticipated and unfortunate consequences. When Gold shut down IM at Continental, he got an angry call from an employee in the fuel management group who was using it (successfully) to negotiate jet fuel pricing for the airline.

Oops.

When a CIO prohibits people from using a technology that doesn't pose a real security threat or doesn't adversely affect his budget, he is setting himself up as a tin idol, a moral arbiter. That's a guaranteed way to antagonize users. And that's never a good idea.

4. Enforce rules, don't make them.
There's a fine line between *providing* access to data and determining *who* should have access to it. And Manulife's

Oracle Database

Get Better Results With Oracle Database

"35% increase in performance and reduced costs by several million with Oracle on Linux"

monster®
today's the day™

Oracle Database 10*g*—
World's #1 Database

ORACLE®

oracle.com/database
or call 1.800.ORACLE.1

Copyright © 2006, Oracle. All rights reserved. Oracle, JD Edwards, PeopleSoft and Siebel are registered trademarks of Oracle Corporation and/or its affiliates.
Other names may be trademarks of their respective owners.

Harmer says IT often crosses it.

"I own the infrastructure," he says, "but the business owns the data." IT creates artificial hurdles for employees when it makes blanket judgments about access that affect the entire company. "The key is not to paint all the users the same," says Harmer.

Lincoln Health's Israel deals with this challenge every day. It's one thing, he says, for his nursing staff to search the Internet for the word *breast*; it's another for someone in the accounting department. But if Israel installed a filter that prevented access to (apparently) pornographic websites, his nurses might not be able to find information that they need to treat a patient. The solution is for IT to provide tools that let an individual's manager decide what information she needs to do the job.

"IT doesn't know everything the business knows," says Gold. "So it's hard for me to make rules about who should have access to what."

5. Be invisible.

Most companies have long lists of policies and regulations with which everyone must comply. But lists don't enforce themselves.

"I wrote all the policies [here], and I only know two of them well," says Israel. "So it's unreasonable for an IT department to expect users to know them all. But we can put systems in place that put some automation behind our policies."

Manulife's Harmer says that the key is to develop an approach that secures data without depending upon how a user accesses it or what he does with it.

"The way I approach it is to bring the controls closer to the data," he says. "That means not relying on a firewall but trying to figure out what I'm actually trying to protect and then dealing with it appropriately."

At Continental, this type of approach has led to a change in the way the IT department designs systems. "Ninety percent of the applications we have that involve sensitive data are things we've written," Gold explains. All that data was protected...as long as the user accessed it from the application IT built. But when a manager tried to compare revenue for different cities by copying the data into Excel (something Gold says happens routinely), the information was suddenly placed at risk. With this in mind, Gold encouraged the IT department to build encryption and other safeguards directly into the applications. That way, when a user pastes the revenue figures into a spreadsheet, the data, not the sanctity and integrity of the application (which are irrelevant), will still be protected.

> "We tend to think of people who think out of the box as troublemakers. But we need to realize that maybe they know what they're talking about and maybe we should try to meet them halfway if we can."
>
> –Brian Flynn, CIO, BCD Travel

Messy But Fertile Beats Neat But Sterile

IT has a natural tendency to think about technology in a system-centric way. Systems automate workflow and control access to information. And for a long time these systems made work and workers more efficient. "But there has always been a bright line between IT systems and what people really wanted to do," says Babson's Anderson.

"I used to have users come to me as if I was the almighty IT god," says Israel, who recalls those as "the good old days." But in that sense, god is dead, and IT's authority and sense of purpose can no longer derive from controlling how people use technology.

"IT can't insist on doling out IT," says Gartner's Smith. "The demographics of the workforce are changing. Younger people who are more familiar with technology are coming in, and they will not sit still while [CIOs] dole out corporate apps. If you want to retain the best and the brightest, you can't lock down your environment."

Smith advises CIOs to try to stop thinking about technology as something that must always be enterprise class. There are plenty of Web-based tools that can meet their users' needs and not cost the company a dime. "Be open-minded and bring them in where appropriate," he says.

Does that mean that the enterprise is going to become a messier place? Absolutely. That's an inevitable consequence of user-centric IT. But messiness isn't as bad as stagnation.

"Controlled chaos is always OK," says Gold. "If you want to be an innovator and leverage IT to get a competitive advantage, there has to be some controlled chaos." CIO

The Gadgets Are Coming

Learn about five emerging consumer technologies that can be leveraged for business advantage in **CONSUMER APPEAL** at **www.cio.com/101506**.

CIO.com

To comment on this article, go to the online version at *www.cio.com/021507*. Senior Editor Ben Worthen can be reached at *bworthen@cio.com*.

3PAR THIN PROVISIONING

Good for your business…
Carbon neutral for the planet

FEWER DISK DRIVES

REDUCED ENERGY

FEWER CARBON EMISSIONS

For every terabyte of disk drives sold with 3PAR Thin Provisioning in 2007, 3PAR will purchase the carbon credits to offset the emissions of one terabyte of disk drives. The result: **carbon neutral storage**.

3PAR Utility Storage with Thin Provisioning is revolutionizing the mission-critical data center. 3PAR customers can **buy half the storage capacity** required with traditional storage arrays, reducing capital costs, energy consumption and carbon emissions.

Learn more about 3PAR Thin Provisioning and the Carbon Neutral Program at www.3par.com/green or contact us: **salesinfo@3pardata.com** or 1-888-3PAR-226 extension 2.

3PAR
Serving Information

Think Thin. Think Green. Think 3PAR.

ADVERTISEMENT

MARKET PULSE

COLLABORATIVE EFFORTS

SURVEY REVEALS CLEAR BUSINESS ACCELERATION USING ON-DEMAND COLLABORATION TECHNOLOGY

Collaboration technology has become a staple in the knowledge worker's arsenal of business tools and a competitive advantage.

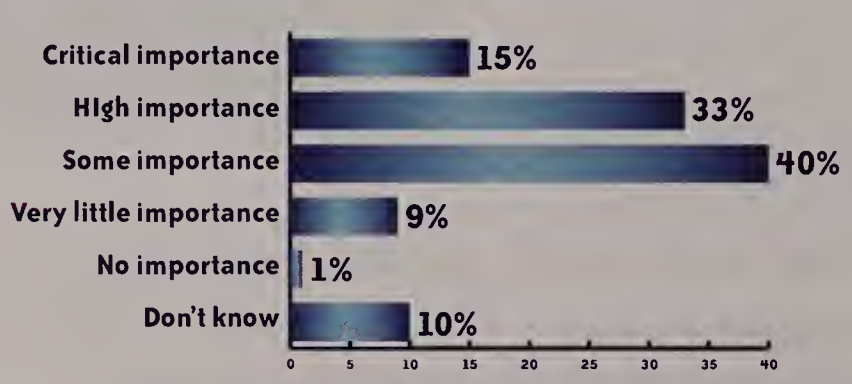
In fact, a majority of IDG Research Services survey respondents say collaborative tools can accelerate business processes and help knowledge workers work better, faster and cheaper.

"Collaborative technology represents such a market advantage that many of our customers refuse to comment on its usage for fear their competitors will discover the secret to their success," says David Knight, WebEx vice president.

Read on to learn how collaboration technology is creating competitive advantage.

NEARLY ONE-HALF CONSIDER SUPPORTING KNOWLEDGE WORKERS WITH COLLABORATIVE TOOLS/SOFTWARE TO BE OF HIGH OR CRITICAL IMPORTANCE

Q: How much importance does your company place on supporting its knowledge workers through investments in collaborative tools and software?



Base: 144 qualfied respondents

ACCELERATING BUSINESS PROCESSES

The most innovative companies have made the leap from using collaboration technology for individual improvement to using it for business process acceleration.

For example, "CIOs who have figured out how to enhance and expedite the sales process are achieving a compelling advantage," Knight says.

In the real world, says George Borak, vice president of sales and marketing at Darco International, Inc., "we enable collaboration among our design, development and production personnel for new product development...without having to travel around the globe."

THE REAL VALUE

Respondents overwhelmingly reveal that the real value of collaboration technology stems from two key areas: enabling knowledge workers, and interacting with external audiences.

Three quarters of respondents who are using collaborative tools are doing so in support of "sales staff and/or other knowledge workers."

"This is where the sustainable competitive advantage comes from," says WebEx's Knight. "Your sales staff and knowledge workers yield the greatest economic return."

And a surprising number of respondents are using collaborative technology to interact with key external audiences: customers/clients (72%), vendors and suppliers (41%), and peers in the industry (37%).

"The companies that have survived and thrived in the changing global economy have maximized their leverage across corporate boundaries," says Knight.

GOING ON-DEMAND

Many CIOs are turning to on-demand collaboration solutions. In fact, respondents estimate that 15 percent of their companies' software spending is currently invested in on-demand software versus licensed software applications.

Indeed, some 84 percent of respondents recognize that there are benefits in on-demand collaboration solutions. Some 44 percent of respondents say the number-one perceived benefit is that on-demand lessens the burden on IT. Other expected benefits include: reduced costs, providing a scalable solution, improved productivity/speed, and keeping the company ahead of the technology curve.

These benefits mean CIOs can deliver quantifiable top-line value, while cutting costs from the bottom line. And, in the end, isn't that what every CIO needs to do?

It's time to use collaboration technology to outsmart the competition. Go to www.cio.com/whitepapers/webex to obtain a free download of *Collaborative Efforts: Survey Reveals Clear Business Acceleration Using On-Demand Collaboration Technology.*

webex™

CIO
Custom Solutions Group

Gregg Kirchoefer (left), chairman of Kirkland & Ellis's tech committee, and CIO **Steve Novak** made sure the new office building design would accommodate future IT needs.

Designed for IT

When Kirkland & Ellis commissioned new office space, the law firm's IT needs were central to its plans

BY ROBERT SHAROFF

In the not too distant past, when a company decided to relocate—into either a new or retrofitted building—technology concerns often took a back seat to issues such as cost, location and design. It was more or less assumed that technology was infinitely flexible and could be accommodated in just about any setting.

Today, however, as tech demands grow ever more complex and more important to the bottom line, CIOs are finding that it pays to be actively involved in corporate real estate decisions from the very beginning. By doing so, they not only have the opportunity to tailor the design of a new facility to meet their company's current and future technology needs, they also are able to do so at a time when it is relatively easy to make changes: on paper and before construction has started.

Nowhere is this trend better demonstrated than at Kirkland & Ellis, an international law firm that has its largest office in Chicago. Two

Reader ROI

:: Why CIOs should be involved with designing office space

:: How to develop facilities to accommodate growth

:: Working with architects and landlords

PHOTO BY CHRISTOPHER LAKE

years ago, Kirkland—which has been located in the Aon Center in downtown Chicago for more than 30 years—signed on to be the anchor tenant in a new 1.3 million-square-foot office tower being developed by Hines on LaSalle Street just north of the Chicago River.

Since then, Kirkland CIO Steve Novak has played a leading role in making sure the building conforms to the needs of the company's tech program.

"We recognized from the very beginning that tech needed to be at the table when decisions about the new building were being made," he says. "That's a key shift in thinking for us but also, I think, for nontechnology companies in general."

Novak first got involved at an earlier stage when the firm was evaluating its options and, indeed, tech requirements proved to be a key factor in the ultimate decision to go into a new facility rather than renovate the existing one. "Technology was an extremely significant part of our decision to move," says Gregg Kirchoefer, a Kirkland partner and chairman of the firm's tech committee, which assisted in the transition process. "Our current building, which dates from the 1970s, was fabulous for its period but obviously wasn't designed to accommodate the systems and technology we have today, and the costs of making it a world-class facility were prohibitive."

"We were literally running out of space to install cable," says Novak. "At one point, the riser rooms were full and we were running cable through mail chutes and any other space we could find." (Riser rooms, or riser closets, are small rooms—about 80 square feet—that house wiring and utility equipment.)

IT-Friendly Design

Once the decision was made to move, says Novak, the first step was understanding in a comprehensive way the firm's current and future tech needs. This led to an intensive multiyear program, wherein just about every aspect of the firm's tech operations was subjected to a rigorous analysis in order to establish optimum benchmarks for a new building.

"The aim," Novak says, "was to identify where we needed to go in terms of tech and what would be required to get us there. In the 1970s and '80s, mission-critical tech systems—that is, systems that are available anywhere in the world on a 24/7 basis—weren't standard in the legal industry. Today, they are."

Phase one of the analysis, which lasted about 18 months, involved developing algorithms for basic building components like power, cooling and square footage.

The second phase consisted of creating computer-generated mock-ups of the 24 floors Kirkland will occupy in the 57-story building and testing various scenarios for installing the different tech configurations being considered. This phase was completed last fall just as the building was breaking ground.

The final phase, which is still under way, involves the actual programming of floors right down to where the secretaries will sit and what kind of telephone headsets they will be wearing. The firm expects to move into the building in the second quarter of 2009.

A critical consideration in all three phases was the human equation. "You have to know what your company culture is before you can choose the right technol-

When Moving Isn't an Option

If you can't build new, remodel what you have

NOT EVERYONE, OF COURSE, has the opportunity to move into a new, custom-designed skyscraper. Retrofitting remains the norm for many companies, for reasons that include cost, location and convenience.

In addition to supervising the technological aspects of Kirkland & Ellis's new office building in Chicago, CIO Steve Novak has also overseen numerous renovations and retrofittings at the firm's half dozen other offices in cities such as New York, London and Munich.

"Retrofits are harder to manage in some ways because they're usually about trade-offs," he says. "You have to accept that there are going to be some limitations, and the challenge is to work within those limitations."

The key, he says, is to make sure management understands what's possible in a given space and makes decisions with those facts in mind. For instance, physical limits on things like load (the amount of weight a floor will support) and cooling also limit the kinds and amount of technology that can be installed in a given space. And unless a landlord is willing to make fairly substantial infrastructure improvements, there isn't a lot that can be done to change the situation with the existing space.

A common problem in many older buildings is dead cabling—that is, the miles of unused cable installed in a building over the years by long-gone tenants—that continues to clog riser closets and passageways. This problem, like many retrofitting problems, is correctable but at a price.

"I think generally it's more expensive to retrofit because of the ongoing possibility of business interruption and also because you're always working around an existing problem or situation," says Novak. "You have to carefully weigh the cost benefit as you move through the process."

Time also becomes key. "Time estimates are harder with retrofits because you never know what you're going to find when you open up a ceiling or wall," says Novak. "It's a discovery process for everyone, and you have to account for that in the plan."

–R.S.

THE NEW STORAGEWORKS ALL-IN-ONE STORAGE SYSTEM. NO STORAGE EXPERT REQUIRED.

With the HP StorageWorks All-in-One Storage System, powered by the Dual-Core[1] Intel® Pentium® D Processor, setting up and moving your data takes less than 10 clicks — no storage expertise required. An intuitive interface eliminates storage complexity by making managing data equally simple, while an HP support team is only a phone call away. Integrated file serving, application data storage and data protection make for a true all-in-one system. So now just about anyone can install and manage network storage. And with a price starting at $4999, just about anyone can afford it.

HP STORAGEWORKS 400 ALL-IN-ONE STORAGE SYSTEM

$4999 Smart Buy

- Dual-Core[1] Intel® Pentium® D Processor 930 (3.0 GHz/800)
- 1 TB storage (4x250 GB SATA, hot plug)
- (2) PCI-X 64-bit 133 MHz expansions slot
- Microsoft® Windows Storage Server™ 2003 R2 and iSCSI Software Target
- Hardware RAID controller

To learn more about how HP has revolutionized network storage,
Click hp.com/go/allinonestorage2
Call 1-800-888-0137
Or find a reseller at hp.com/go/reseller

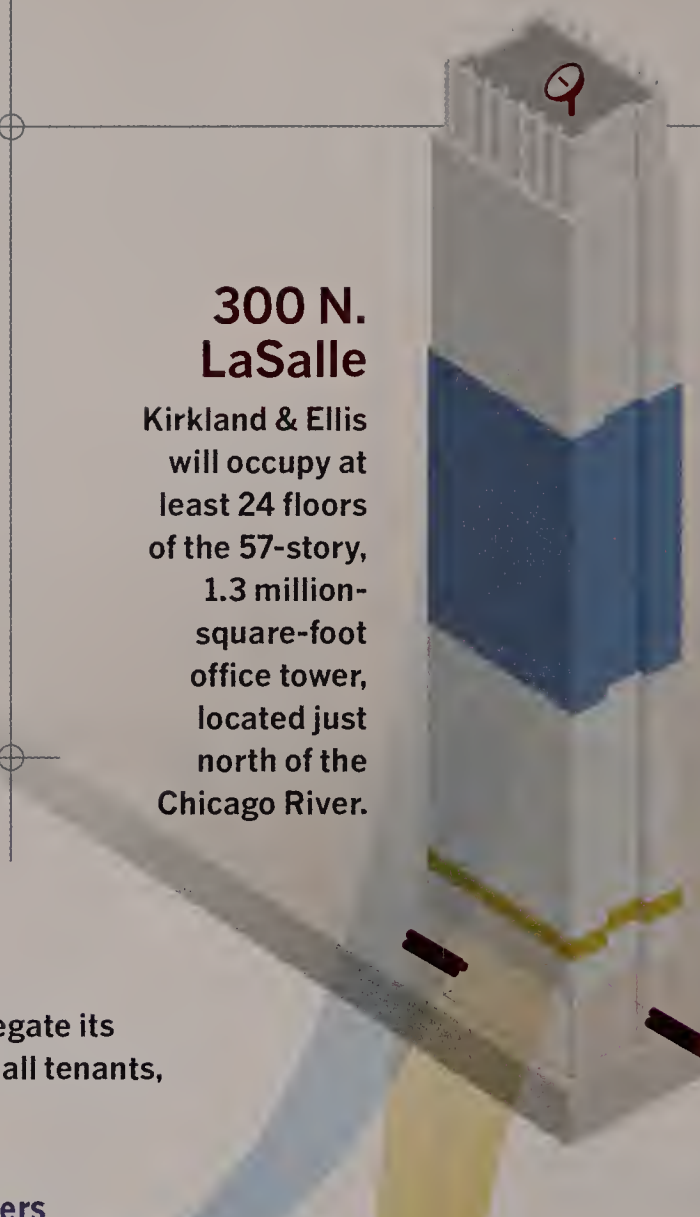
Prices shown are HP Direct prices; reseller and retail prices may vary. Prices shown are subject to change and do not include applicable state and local taxes or shipping to recipient's address. 1. Dual-Core is a new technology designed to improve performance of multithreaded software products and hardware-aware multitasking operating systems and may require appropriate operating system software for full benefit; check with software provider to determine suitability; not all customers or software applications will necessarily benefit from use of this technology. Intel's numbering is not a measurement of higher performance. ©2006 Hewlett-Packard Development Company, L.P. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Intel, Intel logo, Intel Inside, Intel Inside logo and Intel Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Portrait of an IT-Friendly Building

From the ground floor to the ceiling tiles, Kirkland & Ellis designed its new office building to optimize its IT infrastructure as well as support future growth and technological change.

300 N. LaSalle

Kirkland & Ellis will occupy at least 24 floors of the 57-story, 1.3 million-square-foot office tower, located just north of the Chicago River.



Roof Space

For satellite and wireless equipment.

Built-In Continuity

Power, voice and data will enter the basement from two locations, so systems stay online if a backhoe cuts a cable.

A Building Within a Building

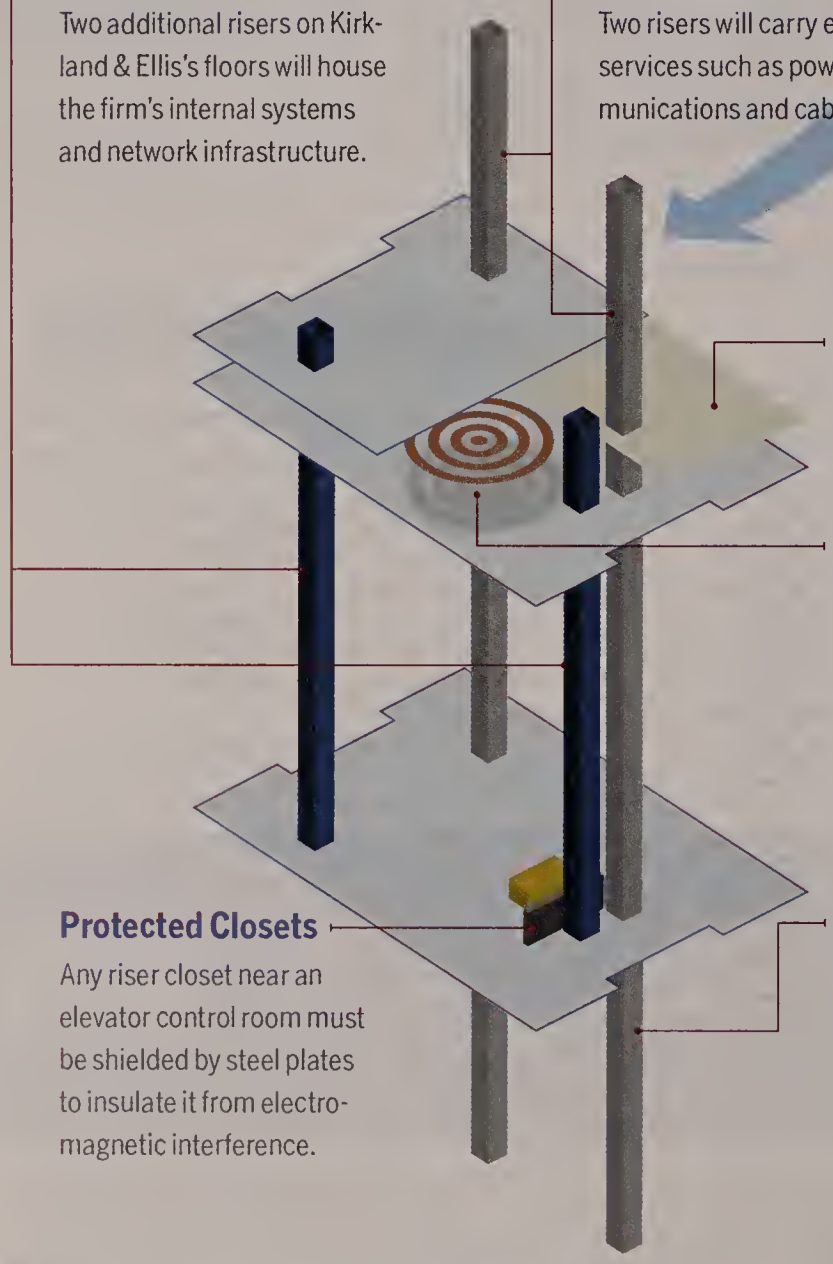
Redundant risers enable Kirkland & Ellis to segregate its systems and networks from services provided to all tenants, making maintenance more efficient.

Dedicated Risers

Two additional risers on Kirkland & Ellis's floors will house the firm's internal systems and network infrastructure.

Building Risers

Two risers will carry essential tenant services such as power, water, telecommunications and cable TV to all floors.



Gypsum Ceiling Tiles

Let wireless signals travel between floors.

Its Own Wi-Fi

While wireless access will be provided for all tenants in public spaces, Kirkland & Ellis will deploy a Wi-Fi network on its own floors just for its employees.

Protected Closets

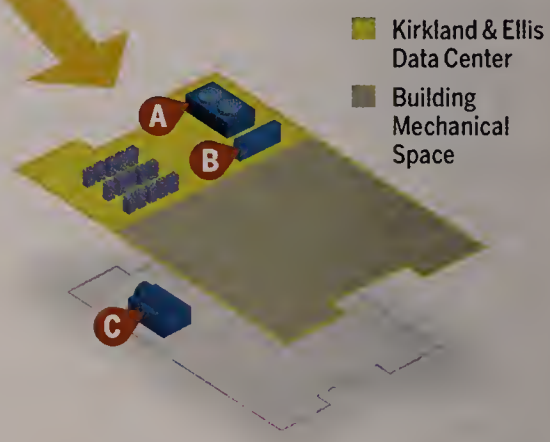
Any riser closet near an elevator control room must be shielded by steel plates to insulate it from electromagnetic interference.

Design for Tomorrow

Big pipes and 12-gauge electrical wiring will accommodate future cooling and power needs.

The Data Center

The firm's 8,000-square-foot data center will be housed above the lobby, on the building's mechanical floor, to take advantage of the heavier floors that are standard for such spaces.



- **A** 240 tons of cooling capacity. Primary cooling is chilled water. Backup cooling is forced air.
- **B** 625 KVA Uninterrupted Power Supply systems.
- **C** 2,000-kilowatt generator (located in lower level 1).

INFOGRAPHIC BY MATTHEW GOEBEL

EXECUTIVE VIEWPOINT

CIO EXECUTIVE VIEWPOINT

E-Business Strategies:

What It Takes to Capitalize on E-Business in Today's Global Economy

Bill York
Chief Technology Officer, Comergent, A Sterling Commerce Company

Bill York is responsible for the architecture and technology foundation of the Comergent product line. Prior to co-founding Comergent, he spent five years at Xerox PARC and Inxight Software, a Xerox company. Prior to Xerox, he worked at several companies in the Artificial Intelligence space and was a founder of ILA, which developed one of the first cross-platform user interface toolkits. Mr. York has a bachelor's degree in computer science from MIT and holds various patents in the area of advanced user interface technology.

Sales is at the core of any e-business strategy. "And since sales is a company's 'secret sauce,' it's important to get that strategy right," says Bill York at Comergent, A Sterling Commerce Company. He recommends that CIOs get started by stepping outside the organization and taking a good long look at the business from a customer's perspective. Here's what else York has to say:

How are CIOs leveraging e-business strategies to achieve growth objectives?

CIOs use e-business solutions so that their company can have direct interactions without compromising their internal ERP and CRM investments. Companies have been able to optimize customer and partner sales experience with their e-business solutions by selling products and services via Web self-service that is integrated to the call center and sales process; speeding new product introductions; entering new markets (geographic, SMB or new channels); and coordinating all partners (suppliers, distributors, retailers/resellers). NEC Solutions America is a perfect example of this, introducing an e-business site for its partners, distributors and call center reps with a unified experience for all business transactions, including all orders. In fact, in the first six months of operations, NEC saw a 20 percent increase in orders with no additional headcount.

"Sales is at the core of any e-business strategy."

What are the most important aspects of a successful e-business strategy?

There are five elements for success. One, make it easy for customers and partners. Do business how and when *they* want. Two, provide customers with a unified buying experience across all channels. Three, create a unique environment with guided selling and configuration capabilities to hide the complexity that often accompanies diverse product lines and build-to-order offerings. Four, be sure to facilitate core sales processes—for instance, leveraging up-sell and cross-sell opportunities. And five, be "partner inclusive," making sure the strategy incorporates the business needs of key partners. Seagate, for example, enables its distributors and OEMs to access accurate product information, gain real-time pricing and availability, place orders, check order status, track shipments and interface with Seagate's accounts receivables—24/7. Seagate has dramatically reduced order errors and duplicated efforts, decreased its costs per order, and capitalized on new and enhanced revenue opportunities. The company has also gained direct, real-time visibility into its distributors' and OEMs' sales and order processes.

How can CIOs reduce complexity in their sales model?

CIOs can reduce complexity by creating comprehensive online catalogs and business rules that guide customers to the right selections. Haworth, Inc., a leader in the design and manufacture of office environments, does this very well. The company offers 33 million products and services with over 600 independent distributors, but simplifies purchasing with a feature-rich online catalog, configuration and order management system. Its customers can select and configure products based on their preferences (base item, options, color, etc.) through an intuitive user interface with rich visualizations of products and price checks based upon their existing pricing agreements. Haworth reduced sales and order processing costs while making it easier for customers and dealers to conduct business. CIOs can also streamline sales by giving customers the same experience regardless of whether they're interacting with a live salesperson, a call center rep or a Web site.

Can CIOs realistically build a unified and satisfying online experience?

Yes. Leveraging an e-business application for external-facing processes that integrates with existing ERP and CRM solutions which are designed to be internally-facing is a very reasonable way to tackle the problem. With an SOA application that is modular, rollouts typically take only 90 to 120 days, and adding functionality doesn't require a major upgrade, so one can respond to market requirements with agility. And such front-ends help streamline processes for a unified experience and hide complexities from customers. Through an e-business solution, customers are satisfied because it's easy and seamless for them to do business with companies.

For More Information:
Check out this white paper, **"Executive Guide to Enterprise eBusiness Success"** at **www.cio.com/whitepapers/comergent**

COMERGENT
A Sterling Commerce Company

CIO
Custom Solutions Group

ogy," says Kirchoefer.

For instance, a key question for most high-tech buildings is whether to install raised floors to accommodate the wiring for individual workstations. The upside is that it makes reconfiguring floors much easier. The downside is that it increases the total height of the building and thus the total cost.

"We studied the way we do business and realized we don't work in a bullpen environment where business units come and go and desks are being constantly rearranged," says Novak. "That's not part of our culture, so for us, there isn't a lot of value in spending the extra money it would take to raise the floors."

In all three phases, Novak has worked closely with both Skidmore, Owings & Merrill, the architects designing Kirkland's floors, and also with Baker Robbins & Co., a technology consultancy based in Chicago. (The building itself is designed by Pickard Clinton.) Baker, says Novak, provided "base level engineering" on IT-related mechanical, electrical and plumbing issues and also advised on future technology projections.

"Tech expectations are higher today for things like speed, availability and simplicity," says Richard Tomlinson, managing partner of Skidmore. "In the laptop age, people don't want to be attached to a wall. You have to work closely with IT people to design that kind of flexibility into the overall infrastructure of a building."

The building will provide basic Wi-Fi service for Internet users in public areas and conference rooms, and Kirkland is installing its own Wi-Fi system for use by its employees. In order to facilitate the transmission of wireless signals, the firm has requested gypsum ceiling tiles throughout its space. Gypsum—unlike metal—is a neutral building material that doesn't interfere with electronic signals.

Steve Falkin, a principal with Baker Robbins, believes there has been a fundamental shift in the expectations of large companies and developers.

"To a great extent today, large tenants assume that they will be fairly self-sufficient in terms of tech and will have their own networks and systems. They're not going to be totally dependent on the tech buildout of the base building," he says. ("Base building" means the four exterior walls, any space that is not occupied by tenants, such as the lobby, plus whatever utilities are required by a given city's building code.) "But they also assume that the base building will not constrain what they want to do and may even support whatever program they're pursuing by providing space for multiple service providers [of] Internet connectivity, phone service, cable TV and satellite communications. Kirkland—because they got in early—was able to make sure that this did, in fact, happen."

> "We recognized from the beginning that **tech needed to be at the table when decisions about the new building were being made.** That's a key shift in thinking for us but also for nontechnology companies in general."
>
> –Steve Novak, CIO, Kirkland & Ellis

A Plan for the Future

Indeed, to a remarkable degree, the building—even the floors Kirkland is not occupying—is being built to Kirkland's specifications.

"This baby is juiced up," says Aaron Bowman, Hines' construction manager for the base building, of Kirkland's tech requirements. Bowman isn't complaining, however. "If it wasn't for Kirkland, we wouldn't be doing the building at all so obviously we want them to be happy with the results."

Novak acknowledges that Hines took some persuading in some areas, mainly because the firm wasn't used to tenants arriving with such detailed tech requirements. "We got a lot of blank stares initially," says Novak. Ultimately, however, the developer realized the value of doing the building Kirkland's way. "As time went on," says Novak, "Hines saw that what we were designing into the building made sense and would be looked on favorably by other tenants."

The overall aim, he adds, is increased flexibility and reliability. For instance, power and electronic services enter most new office buildings through a single entryway in the basement. Kirkland, however, requested two such entryways with physical separation. "That way," says Novak, "if a backhoe in the street takes one out, it won't shut us down."

(One area where the firm had to compromise, however, was power sources: "We wanted the power to be delivered from two different grids," says Novak, "but it turns out that is a utility decision and not something you can specify in a lease.")

There are numerous additional redundancies in everything from chilled water for cooling to riser closets that effectively create a building within the building. The base building, for example, has two riser closets per floor. On Kirkland's floors, however, the firm has requested an additional two closets to house equipment for its in-house networks and systems.

"They're totally segregated," says Novak. "We're going to run our tenant services through our space, and they're going to run the building's services through the base building closets."

Another goal is efficiency. In order to minimize the amount of wiring in the building and also improve access to the system for maintenance technicians, Kirkland requested that these dedicated riser closets be stacked throughout its space.

The wiring itself is a mix of fiber optic

FILE EDIT VIEW INSERT FORMAT PROJECTS RESOURCES SCHEDULES RISKS

Stay up to the minute on 500 projects with 7,000 team members in 6 countries.

I have the solution.

That's no problem.

I'm connected.

Run Primavera ▶

When assignments seem impossible, turn to the leader in project, resource and portfolio management.

Primavera has revolutionized the way companies manage their businesses. We give companies of all types and sizes the expertise to achieve excellence in managing projects, resources and portfolios in a way that helps them deliver measurable results. And that means increased profit.

Find out why Primavera was named a Project Portfolio Management Market Leader by a leading independent analyst firm. Visit www.primavera.com/leader today!

PRIMAVERA®
Business solutions for a project-driven world™

ENGINEERING & CONSTRUCTION • PROFESSIONAL SERVICES • POWER, ENERGY & PROCESS • HIGH TECH/TELECOM • PUBLIC SECTOR • AEROSPACE & DEFENSE • FINANCIAL SERVICES primavera.com

and copper. "The backbone is fiber optic because of the flexibility it provides for present and future tech protocols, but out on the floor we're going to deliver service through copper," says Novak.

The firm is also anticipating the day when wireless and a number of other new technologies—some not even on the current horizon—will play a greater role by building in excess capacity and flexibility in a number of areas.

"Tech projections tend to be relatively accurate over an 18-month to three-year cycle," says Novak. "After that, the future becomes more fuzzy. But the way to accommodate future technologies is to build flexibility into the design. One of the ways you do that is by making sure you can increase your amperage over time. Even though individual devices are becoming more efficient in terms of power usage, the overall number of devices keeps increasing. The long-term trend is for more power. That means installing 12-gauge wire rather than 10-gauge even if 10 is all you need today."

It also means increasing the size of the building's water pipes to allow for additional cooling capacity and making sure equipment is easily accessible, which is part of the reason for the already mentioned dedicated riser closets.

Also key is not basing your design on the requirements of any one vendor's equipment. "You don't want to design your space for Vendor A because Vendor A may not be around in three to five years," says Falkin from Baker Robbins. "You design it in a way so that it is flexible enough to accommodate a range of different vendors and technologies." As data centers become more densely packed with equipment, he adds, "the difficult issues here aren't necessarily about space but about things like power, cooling and cabling. From a future standpoint, it's all about designing these core systems in a manner that allows you to grow or shrink as your needs change."

Get in Sync with the Business

Learn how **ALIGNMENT WITH BUSINESS STRATEGY** helps company growth online at **www.cio.com/021507**.

CIO.com

"In the laptop age, people don't want to be attached to a wall. **You have to work closely with IT people to design that flexibility** into the overall infrastructure of a building."

–Richard Tomlinson, managing partner, Skidmore, Owings & Merrill

The heart of any big company's tech program, of course, is the data center. Kirkland's will share space on the fourth floor with the base building's mechanical operations, a relatively unusual arrangement but advantageous from a cost point of view because such spaces, like data centers, typically are built with heavier floors. "We were able to benefit from the standard engineering that comes into play on mechanical floors," says Novak.

Kirkland's 8,000-square-foot data center will contain four 625 KVA Uninterrupted Power Supply (UPS) systems, 240 tons of cooling capacity and a 2,000-kilowatt generator.

The firm's top-to-bottom approach also included demands for prime space on the roof for its satellite communications equipment. The roof, says Novak, is something that needs to be addressed very early in the process because it affects the aesthetics or look of the façade. He added that Kirkland hasn't fully defined what it will use the space for but that an antenna to boost wireless signals within the building is likely.

A CIO-Landlord Partnership

Kirkland—which has a substantial in-house real estate practice—also devised a unique 100-plus-page lease that includes a 20-page subsection devoted to tech requirements.

"We've never seen anything like that lease," says Hines' Bowman.

"We originally started down the traditional path where tech requirements are scattered throughout the lease but it just became too cumbersome to manage all the information," says Novak. "You have a sentence here and a clause there and it's difficult to keep track of all of it—especially because we had a far more detailed program than is customary. Also, what started to be a challenge was we found that we would add elements to the lease and then somewhere along the way they would get changed during some other conversation or negotiation. The solution was to make the tech portion of the lease a discrete document. It's harder to change that."

Novak adds, "I think this is probably a good foreshadowing of what the future will be like in tech lease negotiations."

The lease is infinitely detailed. Among the clauses is one that requires Hines to insulate Kirkland's systems from electromagnetic flux interference—that is, interference from other electronic systems in a certain area of the base building.

"If any of their riser rooms are adjacent to elevator control rooms," says Bowman, "we're required to steel-plate the wall that separates them."

The financial pluses of this approach should be obvious. Whatever becomes part of the base building is the developer's responsibility. "Whatever is in the lease is our responsibility, so 90 percent of the buildout is on our nickel," says Bowman.

Ultimately, Novak believes Hines acquiesced because even the most elaborate tech program doesn't involve much additional cost—especially when it's addressed in the early design stages. "It's almost like working with a clean slate," he says. "It's very easy to make changes on paper. I really believe that half the battle is knowing what you want and asking for it." CIO

Robert Sharoff is a freelance writer based in Chicago. He can be reached at *rsharoff@ameritech.net*. To comment on this story, go to the online version at *www.cio.com/021507*.

CALL FOR ENTRIES

20TH ANNUAL AWARDS COMPETITION

IT Makes Winners.

You can't beat the competition by standing still. And you can't move ahead without the edge technology provides.

We want to know how IT makes your company grow.

We're celebrating all the innovative ways that IT can deliver a competitive advantage to the enterprise. Perhaps you took a risk on an emerging technology or deployed the tried and true in a new way. Maybe you built a better business process or fostered closer collaboration. Or you found ways to get closer to existing customers, to pursue new markets, to save money, to make more.

If you can show measurable results of technology innovations that have enabled or led the way to greater success for your organization, then our readers—your peers—want to know about you.

Be recognized as one of the CIO 100.
Apply now for the 20th Annual CIO 100 Awards.

DEADLINE EXTENDED

All applications due February 28, 2007

CIO 100 honorees will be recognized at the annual CIO 100 Symposium & Awards Ceremony, Aug. 19–21, 2007, at the La Costa Resort in Carlsbad, Calif. Honorees—and their winning ideas—will also be featured online and in the Aug. 15, 2007, issue of *CIO*.

To learn more about the CIO 100 Awards and get an application, go to ***www.CIO.com/cio100***.

Presented by

CIO

Business Technology Leadership

CIO & CSO Business Continuity Forum 2007

...Building the Resilient Enterprise

July 17-18, 2007 : New York, NY

Topics to include:

- Structuring a Business Continuity Plan: Treatment to Prevention
- Legal Requirements
- The Looming Threats: Terrorism to Pandemic
- Selling the Plan
- Business Resiliency in the Supply Chain
- Personnel Training & Exercises
- Outsourcing/Insourcing
- Succession Planning
- Crisis Case Studies
- Original Research: Best Practices in Business Continuity
- Technology Breakouts

Platinum Sponsor:

EMC² where information lives®

IBM

UNISYS imagine it. done.

The Three Key Pillars of Resiliency:

CIO & CSO Business Continuity Forum 2007... Building the Resilient Enterprise will provide attendees with the key strategic and tactical skills necessary to address the issues of continuity, recovery and resiliency in their enterprises. Attendees will walk away with the knowledge of how to enable enterprise resiliency within their organizations. If you are a CIO, CSO, CTO or other business technology executive you won't want to miss this program!

Mark your calendars now to attend **CIO & CSO Business Continuity Forum 2007...Building the Resilient Enterprise**. Visit **www.cio.com/bc_2007** or call 800.366.0246 for additional program information.

Presented by:

CIO Business Technology Leadership

CSO The Resource for Security Executives

Underwriters:

hp invent

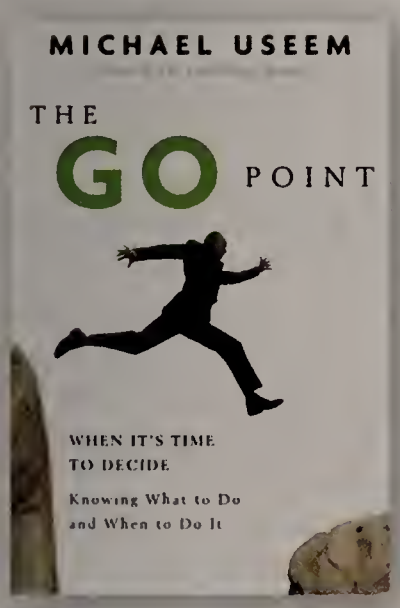
ProCurve Networking HP Innovation

SUNGARD Availability Services | Keeping People and Information Connected.®

A tragic wildfire provides lessons about how leaders can make the best call when there's no time and no room for mistakes

BY MICHAEL USEEM

Decisions Under PRESSURE



The Go Point
By Michael Useem
Crown Publishing, 2006, $25

On July 6, 1994, Donald Mackey was helping oversee a team of 49 firefighters on Storm King Mountain in Colorado. It looked like a routine fire, but it is always a mistake to treat any back-country blaze as routine. Bad luck and a fatal confluence of environmental factors contributed to the flaming ambush of the firefighters, but individual decisions were critical. Fourteen firefighters, including Mackey, died on the mountain that afternoon as the fire blew out of control. Wildland fires are special. But the experience of those who fight fires in the outdoors has much to teach us about decision making indoors, especially when there's little room for error or delay. And like so many critical business decisions, fire decisions brutally punish those who do not keep both the big picture and small detail in mind.

Acute Stress and Decision Making

Wildland fires can reach 2,500 degrees Fahrenheit, race at speeds up to 25 miles per hour and leap overhead without warning. At their most dangerous, such fires are said to "blow up," acquiring a manic momentum of their own. A blowup is one of nature's most terrifying spectacles—one reason tension is ever-present in a fire zone. For crew leaders and incident commanders, the tension can become acute. The more severe the stress, the less optimal decisions are likely to be just at a time when they are becoming most consequential.

The decision-making burden on fire leaders is made even greater by three organizational factors that are prevalent in combatting wildland blazes. First, crew leaders guide a workforce that is largely seasonal since fires are most common in the summer. Second, leaders are

required to collaborate with agencies over which they have no control. And third, as fire crews meld into temporary amalgamations on larger blazes, crew leaders and incident commanders find themselves working with, reporting to, or instructing others whom they have never met or barely know.

The weak relations among the parties also tend to result in information hoarding as much as sharing. Add up the parts—a reduced flow of information to the fire leader, a weakened commitment by the leader to exercise authority and diminished team compliance with the leader's instructions—and you have the makings of a decision crisis.

Authority Begins to Blur

As light dawned on July 5, Butch Blanco, 50, a veteran firefighter with the U.S. Bureau of Land Management, hiked up the mountain to evaluate the situation. Just a few months before, Blanco had qualified as an incident commander, the person who takes charge of a blaze. He and his team of seven began digging a line around the slow-moving fire. But this blaze was more tenacious than Blanco expected, and at 8:19 a.m. he radioed for help.

Since Blanco's fire was not a priority (there were bigger ones in the region) it was not until 5:20 p.m. that an eight-person crew of smokejumpers, some of the best-trained wildland firefighters in the country, boarded a small plane. Among them was Don Mackey. Mackey, 34, had eight seasons of smokejumping under his belt and had also served as an instructor. Seated next to him was Sarah Doehring from upstate New York, whom Mackey had helped train.

At 5:45 p.m. the smokejumpers left the plane. Because Mackey happened to be sitting nearest the door, he leaped and landed first. That made him the "jumper in charge." He would coordinate the landing and prepare the crew. The fire was still Blanco's responsibility, but the lines of authority would begin to blur.

The Fire Spreads

Unequipped for a night on the mountain, Blanco and his crew descended to the town of Glenwood Springs not long before Mackey and his fellow smokejumpers arrived. Within hours, the flames had crossed the fire line Blanco's crew had cut, growing from 30 acres to 50. Don Mackey went into action against the blaze.

"We all thought we were going to dig a line around it by midnight," Doehring remembered. But it continued to spread. In Blanco's absence, Mackey took the initiative, radioing a request for two more crews (Decision 1).

As dawn broke on July 6, Mackey again took the initiative, asking for a fixed-wing aircraft that would serve as a full-time "eye in the sky" (Decision 2). None was available; instead he got a helicopter that would have to do double duty ferrying gear. The effect was to leave him partially blind at a time when the blaze was threatening to morph into something larger.

The Critical Decision

Early that morning, Blanco reappeared on the ridge with a fire crew of 11. Now Mackey and Blanco huddled. Deciding they needed more information, they boarded the helicopter at 9:30 a.m. to get a better sense of the fire (Decision 3). What they saw was worrisome. The blaze had expanded to 125 acres and was creeping down the west flank of the ridge. Mackey proposed a bold plan (Decision 4). He wanted to cut a fire line below the flames since fire can climb up a slope faster than a person can.

Because Blanco concentrated on the fire at the top of the ridge and Mackey lower down, neither had an overall view of the situation. Nor did they know that nature was creating the catalyst for a catastrophe.

Blanco agreed. This was a crucial moment in which two important things happened. First, Blanco effectively ceded some of his authority to Mackey, who became the point man on the downhill fire line. Second, both men committed themselves to a strategy at odds with established rules. "Downhill fire line construction is hazardous in steep terrain, fast-burning fuels or rapidly changing weather," warns the wildland firefighters' manual. All three conditions prevailed in the canyon. The manual also cautions against relying on a steep uphill escape route, but Mackey's plan created just that. Some of Mackey's team considered this a dangerous call. Mackey argued that the fire would run back uphill—above the proposed fire line—in the event it surged out of control. "Let me have a big crew and we'll do this. We'll do fine," he said.

Mackey's confidence got the crew moving. In the absence of an experienced decision-maker, a "can-do" attitude had triumphed.

Who's in Charge?

An hour later, eight additional smokejumpers floated onto the ridge. The melding of crews from diverse locales and agencies became further exacerbated at 1 p.m. when 20 hotshots from Prineville, Oregon, began arriving. Like smokejumpers, hotshots are among the most highly trained and esteemed wildland firefighters.

Mackey was now supervising 24 people over whom he had no authority. Did that mean the fire was his? At 2 p.m. he asked fellow smokejumper Kevin Erickson. "I don't know," Erickson responded. "Neither do I," said Mackey. But he took no steps to clarify the issue (Decision 5).

The lingering ambiguity may also explain why Mackey ignored procedures that call for lookouts to ensure that no flames are burning below a fire line. Behind a vertical cleavage known as Lunchspot Ridge, the fire had already burned down below the level of the fire line. Had there been a lookout—or the surveillance plane Mackey never got—the radios would have been crackling with warnings.

The Forest and the Trees

Because Blanco concentrated on controlling the fire at the top of the ridge and Mackey on completing the fire line lower down, neither had an overall view of the situation. Nor did Mackey, Blanco or their crews know that nature was creating the catalyst for a catastrophe.

More than 480 of your peers in the CIO Executive Council have begun to change the perceptions of IT across the globe by collaborating on issues most important to the CIO community.

Join CIO Executive Council members at the CIO Leadership Conference from April 29-May 1, 2007. With a focus on transforming the role of the CIO and enterprise strategy, attendees will kick off their visit with a complimentary reception and open house, courtesy of the CIO Executive Council. The 2007 Ones to Watch Award will also be presented to future IT leaders during a special ceremony.

For more information, visit www.cio.com/leader_2007.

CIO Executive Council

The Professional Organization for CIOs

The CIO Executive Council is the world's first professional association focused exclusively on the CIO. Founded in 2004 by the readers of *CIO* magazine, Council members are committed to leveraging the individual and collective strengths of the community of CIOs to advance the CIO profession and its role in driving shareholder results for their respective organizations. In just over two short years, the CIO Executive Council has grown to more than 480 CIOs worldwide, representing executive leadership in organizations with approximately $2 trillion (USD) in annual revenues.

For information on membership, please visit **www.cioexecutivecouncil.com.**

Founded by

CIO

Business
Technology
Leadership

A meteorologist predicted that a cold front would surge through around 3 p.m. Bureaucratic bungling had bottled up the alert. Mackey never asked for a weather forecast (Decision 6). If Mackey had been certain that he was in charge, he might have felt compelled to seek the data. By 3:30 p.m., taking note of the rising winds, Mackey assigned Doehring to patrol the west-flank fire line for burning debris and hot spots.

Some of Mackey's team considered his plan dangerous, but his confidence got the crew moving. A "can-do" attitude had triumphed.

"What should I do if the wind comes up?" she asked.

"Go down," Mackey instructed.

As they stood, though, and Doehring began to resume her patrol, Mackey changed his mind and ordered her back to the top of the ridge (Decision 7). Tense about the worsening conditions, Doehring was relieved to turn around—an act that saved her life.

The Blowup

By 4 p.m., the fire came surging from both below and from the far end of the fire line. Mackey stopped fighting the fire and raced to survive it. He told eight firefighters to run up Lunchspot Ridge to an area where he knew there was sufficient cover (Decision 8). Mackey did not follow them. Instead he radioed ahead: "Okay, everybody out of the canyon!" Then he dashed back along the fire line, urging the remaining firefighters to flee (Decision 9).

Six firefighters crested the ridge top with seconds to spare. Mackey and the rest were not far behind, but the steepness of the hill meant that they were not moving fast enough. At 4:16 p.m., a 300-foot wall of flame overtook nine of the Oregon hotshots and three smokejumpers, including Mackey. They were less than 100 yards short of safety. It took five more days to bring the fire under control. The final death toll reached 14, making it one of the deadliest forest fires in U.S. history.

What Worked

Five of Mackey's nine decisions proved relatively optimal while the other four were less so, in some cases far less so. Those that improved the likelihood Mackey and his team would swiftly and safely suppress the South Canyon fire were:

- **Decision 1**—to request two additional crews, which secured the firefighters necessary to combat a expanding fire.
- **Decision 3**—to conduct aerial surveillance personally, which improved Mackey's information on the environment.
- **Decision 7**—to send Doehring to the top of the ridge, a decision that saved her life.
- **Decision 8**—to dispatch eight smokejumpers up Lunchspot Ridge, moving them into a life-saving area.
- **Decision 9**—to evacuate the West Flank fire line, helping to move six firefighters toward another life-saving area and placing team survival ahead of personal safety.

What Didn't Work

Weighing against Mackey's five successful decisions were four that lessened the likelihood that he and his team would halt the fire or even come out alive. In each case, the choice can be explained at least in part by the three factors identified as potentially undermining effective decision making: underpreparation, acute stress and ambiguous authority.

- **Decision 2**—requesting continuous aerial surveillance. Mackey's seeming reticence about pursuing the request further was probably derived from the fact that he was not the incident commander.
- **Decision 4**—to construct the downhill fire line. A more thoroughly prepared decision-maker might have been less sanguine about transgressing standard operating procedures. A more experienced leader also might have been uncomfortable predicating this strategy on a resource not yet firmly in hand: the "big crew" that never materialized. Finally, a leader with unequivocal authority might have been more successful in deploying the big crew that was required.
- **Decision 5**—not to clarify who was in command. With greater experience and training comes greater appreciation for the requirement of clarity in who carries ultimate responsibility on the line.
- **Decision 6**—not to secure a weather forecast. The uncertainty of whether Mackey was incident commander was a likely factor in combination with his underpreparation and preoccupations.

Lessons in Decision Making

Fourteen people lost their lives in what most qualified observers have concluded was a preventable disaster, derived in large part from an underdeveloped capacity for making rapid decisions under demanding conditions. In 2001, the National Wildfire Coordinating Group, a consortium of federal and state wildland firefighting agencies, established the Wildland Fire Leadership Development Program. The odds are good that anyone who has been through this program will be better prepared to deal with two of the three root causes of the suboptimal decisions that plagued leaders on Storm King Mountain: inadequate preparation and high stress. Separately, the fire service has attacked the third cause—ambiguity of authority—by sharpening and better instilling the principles of unequivocal responsibility on a fire line. CIO

Reprinted by permission of Crown Publishing, a division of Random House. Excerpted from *The Go Point: When It's Time to Decide—Knowing What to Do*, by Michael Useem, 2006. Useem is a professor of management at the Wharton School. To comment on this article, go to the online version at *www.cio.com/021507*.

Be a Better Decision-Maker

To find out more about the U.S. Forest Service's **LEADERSHIP DEVELOPMENT** program, along with other information related to *The Go Point*, go to **www.cio.com/021507**.

cio.com

VALUE

At Red Hat, we bring choice to customers. We make better software faster. Software that scales and is surrounded by a broad range of hardware and applications. We price it fairly, and back it up with expert service.

www.redhat.com

© 2007 Red Hat, Inc. All Rights Reserved. Red Hat, Red Hat Enterprise Linux, the Shadowman logo and JBoss are registered trademarks of Red Hat, Inc. in the U.S. and other countries. Linux is a registered trademark of Linus Torvalds. All other trademarks are the property of their respective owners.

redhat

CIO

SALES AND SERVICES

CIO SALES OFFICES

President and CEO
Michael Friedenberg
508 935-4310

Publisher
Gary J. Beach
508 935-4202

VP, National Associate Publisher
Bob Melk • 415 975-2685

Sales Operations Manager
Dawn Cora
508 935-4092
Fax • 508 879-6063

EAST COAST

Regional Sales Director
Brian Glynn
508 935-4586

Regional Sales Manager
Ellie St. Louis
201 634-2332

Senior Sales Associate
Norma Tamburrino
201 634-2329
Fax • 201 634-9513

NORTH CENTRAL/ SOUTHWEST/SOUTHEAST

Regional Sales Manager
Beth DeVillez
773 334-8005

Sales Associate, EP/Sales
Nicole Blackburn
508 935-4154

SOUTHERN CALIFORNIA

Regional Sales Manager
Kevin Ebmeyer
415 975-2684

WEST COAST

Senior Regional Sales Manager
Ai Collins • 415 975-2686

Regional Sales Manager
Kevin Ebmeyer
415 975-2684

Account Executive
Derek Jung
415 975-2683
Fax • 415 543-2358

INTEGRATED MEDIA AND ONLINE SALES

VP, Integrated Media and Online Sales
Jim Alla • 508 988-6763

Online Regional Sales Manager
Tina Dudarevitch
718 279-2396

Lori Kehoe
415 978-3329

Online District Sales Manager
Sara Mascall
415 978-3385

Manager, Online Account Services
Danielle Tetreault
508 988-7969

Online Account Services Specialist
Valerie Sumner
508 988-7877

Online Advertising Specialist
Irina Gabechiia
508 935-4414

Online Ad Sales Associate
Devon Slattery
415 975-2687

Online Account Services Coordinator
Hayley Nickerson
508 988-7819

CUSTOM SOLUTIONS GROUP

Vice President
Matt Avery
508 935-4796

Director of Sales
Mary Gregory
508 988-6765

Executive Editor
Tom Field

Managing Editor
Jim Malone

Senior Project Manager
Amy Greenleaf

Project Managers
Karen Capland,
Amy Freeman

LIST SERVICES

Contact Paul Capone of IDG List Services at 508 370-0865 or *pcapone@idglist.com*.

REPRINT SERVICES

For article reprints (100 quantity or more), please contact Jennifer Eclipse at PARS International at 212 221-9595 x237 or via e-mail at *jeclipse@parsintl.com*.

***CIO* is published in the U.S. as well as in:**
Australia, CIO Australia *www.idg.com.au*
Canada, CIO Canada *cio.itworldcanada.com*
China, CEO & CIO China *www.ceocio.com.cn*
France, CIO France *www.idg.fr/cio*
Germany, CIO Germany *www.cio.de*
India, CIO India *91-80-521-0309/12*
Japan, CIO Japan *www.idg.co.jp*
The Netherlands, CIO Netherlands *www.cio.nl*
New Zealand, CIO New Zealand *www.idg.co.nz*
Norway, CIO Business Standard *www.business-standard.no*
Poland, CXO Poland *www.cxo.pl*
Singapore, CIO ACEN/ Hong-Kong *www.idg.com.sg*
South Korea, CIO Korea *www.cio.seoul.kr*
Sweden, CIO Sweden *www.cio.idg.se*

For further sales information: *www2.cio.com/marketing/aboutcio/contacts.cfm*

INDEX OF COMPANIES AND ADVERTISERS

Page numbers refer to the first page of the article(s) in which the company has a substantial mention. This index is provided as a service to readers. The publisher does not assume any liability for errors or omissions.

COMPANY INDEX

451 Group, The 23
Aberdeen Group 13
Activant Solutions Inc. 23
Adobe Systems Inc. 40
Advanced Micro Devices Inc. 13
American Power Conversion Corp. 13
Apache Software Foundation, The 23
AT&T Inc. 8
Baker Robbins & Co. 55
BCD Travel 40
Best Buy Corp. 40
BroadVision Corp. 40
Camden Property Trust 40
Charles Schwab Corp., The 72
ClearStory Systems Inc. 40
Compiere Inc. 23
Continental Airlines Inc. 40
Cyber Continuity Center LLC. 13
Dell Inc. 30
Ektron Inc. 40
EMC Corp. 40
Eons Inc. 13
Extensis 40
FatWire 40
FileNet 40
Forrester Research Inc. 23, 40
Frilac S.A. 23
Galenicum 23
Gartner Inc. 23, 40
GlassHouse Technologies Inc. 13
Google Inc. 40
Hines Interests Ltd. Partnership 55
HRCharter 13
Hummingbird 40
IBM Corp. 13
Kirkland & Ellis LLP 55
Infor Global Solutions 23
Intel Corp. 13
Intuitive Manufacturing Systems 23
John C. Lincoln Health Network 40
Karvy Global Services Ltd. 13
Lawson Software 23
Manufacturers Life Insurance Co., The .. 40
Microsoft Corp. 23
Mobius Management Systems Inc. 40
Monster 13
Motorola Inc. 40
neoIT 13
Nexedi 23
Openbravo S.L. 23
OpenMFG LLC. 23
Oracle Corp. 23, 40
Owens & Minor 13
PeopleBoard 13
PepsiCo Inc. 30
Pew Internet & American Life Project 40
Prevention Partners 23
PTRM Management Consultants 23
QAD Inc. 23
SAP 23
Searchsecurity.com 40
Skidmore Owings & Merrill LLP 55
Stellent Inc. 40
Taco Bell Corp. 30
Taylor Nelson Sofres PLC 13
Texas Credit Union League 40
Tiny 23
Transactional Data Systems 23
TRUSTe 13
Uptime Institute Inc., The 13
Vertex Distribution 23
W Group, The 13
Whitehill Technologies Inc. 40
Xerox Corp. 40

ADVERTISER INDEX

3PAR 53
Acxiom Corp. 19
American Power Conversion 25
Audio Visual Innovations C3
BMC Software Inc. 15
CDW Corp. 33
Comergent Inc. 59
CXO Media Inc. 49, 63, 64, 67, 71
Dell Inc. 21
Diskeeper Corp. 47
Hewlett-Packard Co. (regional) 57
Hewlett-Packard Co. 5
Hyperion Solutions Corp. 2
IBM Corp. 27, 29, 42
Intechra Inc. 39
Intel Corp. 17
InterSystems Corp. C4
Juniper Networks Inc. 31
Kyocera Mita Corp. 35
MessageGate Inc. 22
Microsoft Corp. 37, 48a
NEC Corp. 7
Novell Inc. 45
Oracle Corp. 51
Primavera Systems Inc. 61
Red Hat Inc. 69
SAS 12
Symantec Corp. C2
Tata Consultancy Services Ltd. 11
Toshiba America Business Solutions Inc. 9
WebEx Communications Inc. 54

CIO CONTACT INFORMATION

Editorial, Advertising and Business Offices: CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208, 508 872-0080.

CIO (ISSN 0894-9301) is published semimonthly and as a combined issue Dec. 15/Jan. 1 by CXO Media Inc. Periodicals postage paid at Framingham, MA, and at additional mailing offices. Canada Publications Mail Agreement Number 1902075. CANADIAN POSTMASTER: Please return undeliverable copy to P.O. Box 1632, Windsor, ON N9A 7C9.

Permissions: Copyright 2007 by CXO Media Inc. All rights reserved. Reproduction of material appearing in *CIO* is forbidden without written permission. Send all requests to Yadira Pizarro, PARS International, 212 221-9595, Ext. 231, or *yadira@parsintl.com*.

Photocopy Rights: Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by *CIO* for users through the Copyright Clearance Center, provided that a fee of $3.50 per copy of the article is paid directly to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01970. *www.copyright.com*. Please specify: ISSN 0894-9301. Permission to photocopy does not extend to contributed articles followed by this symbol: ‡.

Subscriptions: *CIO* is free to qualified information executives. To apply, use our online subscription form at *www.subscribe.cio.com*. Subscriptions are also available on a paid basis at a rate of $95 for the United States and Canada, $195 International (payable in U.S. funds only) and may be ordered online at *www.subscribe.cio.com/services.html*. Or address inquiries to *CIO*, P.O. Box 489, Northbrook, IL 60065-0489; 866 354-1125. Please allow four to six weeks for a new subscription to begin. The single copy price is $9 for the United States and Canada, and $15 International. Prepayment is required, payable in U.S. funds.

Change of Address: Please go to *www.omeda.com/custsrv/cio* and follow the online instructions.

Postmaster: Send change of address to *CIO*, P.O. Box 489, Northbrook, IL 60065-9816. Printed in the U.S.A.

CIO

Business
Technology
Leadership

Executive Programs

where you need to be

CIO Executive Programs combine cutting-edge education and networking opportunities for busy executives. Our programs attract the best and brightest IT executives and our brand is synonymous with the highest quality and integrity. These face-to-face conferences are regarded as the trusted networking resource for the nation's CIOs because we know and understand the executive IT community better than any other IT resource.

Save the date for the following programs:

CIO Leadership Conference
Transforming the Role of the CIO:
Strategies for Orchestrating Change
April 29 - May 1, 2007
Hyatt Huntington Beach
Huntington Beach, California

CIO & CSO Business Continuity Forum 2007
Building the Resilient Enterprise
July 17-18, 2007
Marriott at the Brooklyn Bridge
New York, New York

CIO 100 Symposium & Awards
Discovering New Sources of Innovation
August 19 - 21, 2007
La Costa Resort and Spa
Carlsbad, California

CIO|08 The Year Ahead
Beyond Technology:
The Forces Driving Change and Growth
October 28 - 30, 2007
The Hotel Del Coronado
Coronado, California

For more information and to register visit:
www.cio.com/conferences
or call 800-366-0246

5 Things I've Learned

THE VOICE OF EXPERIENCE * AS TOLD TO C.G. LYNCH

Craig Newmark founded Craigslist, featuring user-published classified advertising from 450 cities worldwide. It receives about 5 billion page views a month, ranking it among the top 10 English-language sites.

Trust your customers.

In the beginning, my idea was to run a site about events in San Francisco. Almost everything else came from user suggestions. For instance, after my first two months, people started suggesting "jobs" and "stuff for sale" in addition to events. So I learned that you need to listen to customers to find out what's really needed. In a lot of corporate cultures, people forget they are dealing with other people.

I'm a believer in open source.

It is often higher in quality and more secure than proprietary software. At Charles Schwab, I recommended Windows deployment because of its potential for security architecture. The thing is, that didn't work out. There are good people at Microsoft, and maybe they'll solve some of the Windows security problems with Vista. But meanwhile, we have Firefox, where stuff gets fixed painlessly.

The Internet facilitates innovation.

The Internet is a disruptive technology. That's a good thing because it encourages collaboration. It is a democratizing force.

Entry barriers for online businesses are lower now.

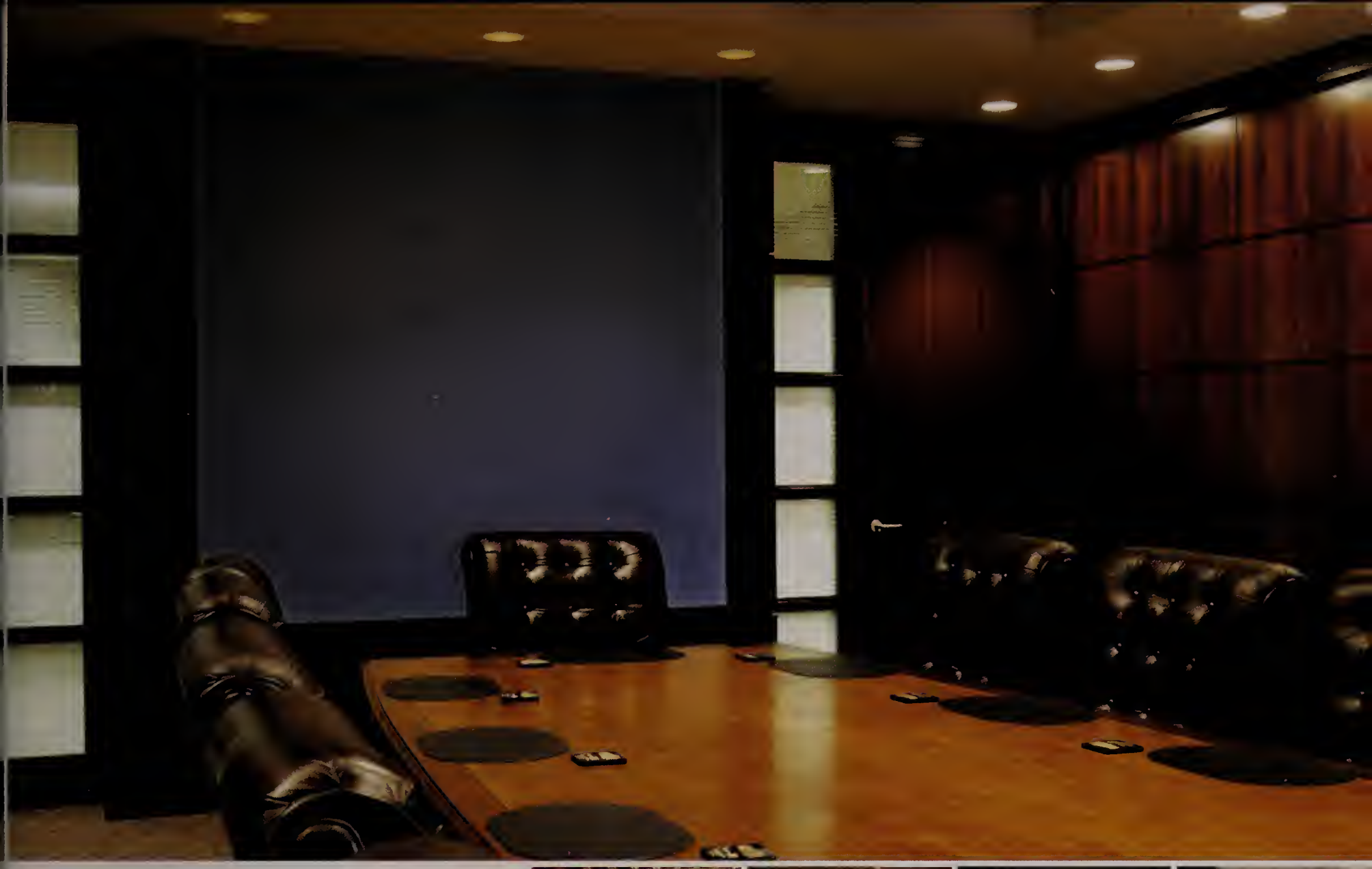
Servers and bandwidth are cheaper. People with good ideas can do something without considerable investment. However, if Congress reneges on net neutrality, that could interfere with people's ability to innovate or to express alternative views.

Net neutrality is important to me.

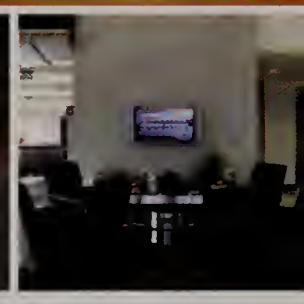
It's a principle for everyone to have an equal voice. Without it, small companies will have to pay extra broadband fees to compete for customers against bigger rivals. Suppose you call your local pizza shop. Instead of getting Joe's Pizza right away, you get a message saying, "We'll connect you to Joe's Pizza in a minute, but if you want, we can connect you to Pizza Hut right away." It's unfair. Citizens made a deal with the telecoms by saying, "Use our rights of way and airwaves to make a lot of money, but we expect a little bit in return." The telecoms are now saying, "No, we'll just take what we want." I'm seeing people attack net neutrality. My fear is that as the bad guys fight back with disinformation campaigns, it threatens our republic.

To comment on this article, go to *www.cio.com/021507*.

GENE X HWANG OF ORANGE PHOTOGRAPHY



AVIInsight



Our audiovisual solutions are all business. Fully-customized. Seamlessly integrated. Engineered using the latest technologies. Designed to fit your company's needs, business culture, and architectural vision.

Training facilities. Boardrooms. Conference rooms. Cafeterias. Kiosks. Our vision is infinite, our execution is unparalleled.

To download your informative white paper and enjoy a FREE cup of coffee on AVI, please visit www.aviinc.com/cio

Or set up a consulation by calling toll-free **866.634.7265**

Audio Visual Innovations

Innovations by **InterSystems**

Teach old applications new tricks.

Chances are you have users who want your applications to do new and wondrous things. So you've probably tried rewriting them, and know how difficult that can be.

We have an easy way to enhance applications *without* rewriting – adding functionality and new user interfaces, and giving your applications the capability to work together as an ensemble.

These impressive tricks are performed easily with Ensemble – a software innovation by InterSystems that enables you to extend your applications with a browser-based user interface, adaptable workflow, rules-based business processes, executive dashboards, and more. In addition, Ensemble gives you the ability to rapidly connect people and processes.

We are InterSystems, a global software company with a 28-year track record of innovations that enrich applications.

InterSystems
ENSEMBLE®

Read case studies about this exciting innovation at **InterSystems.com/Enrich5F**

© 2007 InterSystems Corporation. All rights reserved. InterSystems Ensemble is a registered trademark of InterSystems Corporation. 2·07 EnsEn5 CIO